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Louis Kuhne

The New Science of Healing

or the doctrine of the

UNITY OF DISEASES

forming the basis of a

Uniform Method of Cure, without Medicines and without Operations.

An Instructor and Adviser for the Healthy and the Sick

by

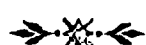
Louis Kuhne.

Motto:
"He who seeks the truth must not count the suffrages."
Leibniz.

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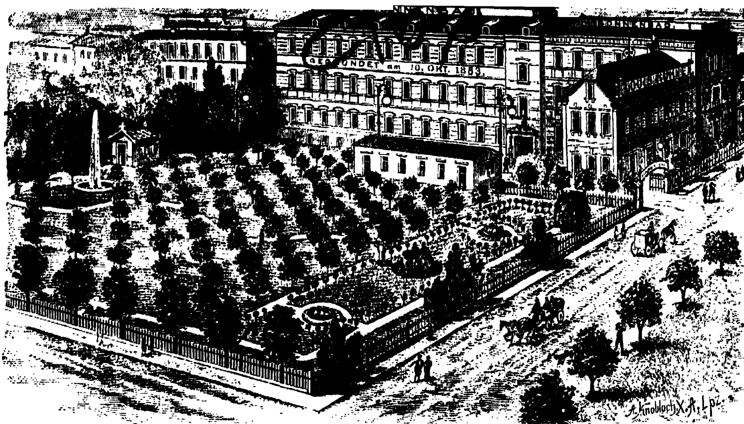


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Louis Kuhne

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Gottfr. Pätz, Naumburg a. S.

PREFACE
to the Seventh German Edition.

But a few months had elapsed after the publication o the sixth edition, when the pressing demand made it necessary to commence with the issue of a seventh. A higher reward could not fall to my lot; for the rapid spread of this volume, implies that *my discoveries*, the *Unity of Disease*, and the *Science of Facial Expression*, have taken firm root in all parts of the earth. This was the aim I had in view in writing my work, and seldom, I imagine, has one's wish been so completely fulfilled. From every region of the globe, I daily receive enthusiastic letters, showing me more clearly than anything else, how the explanations contained in my book, in the province of therapeutics, are attracting an ever increasing circle of friends.

It will scarcely be imagined, how extremely difficult it was, at first, to find anyone with an understanding for my new doctrines. A toilsome, almost insuperable work lies behind me. To-day all is changed; everywhere the New Science of Healing finds sympathetic acceptance, except amongst a few sceptics and persons who believe they know everything better than anyone else, and who generally consider it superfluous to make a practical trial of my method. I hope such will continue their agitation against me. They cannot, as experience has proved, permanently injure the cause; on the contrary, they not immaterially assist me in the explanation of my theory.

But side by side with success, we always find *envy* and *greed*, and *the attempt to appropriate what has been ascer-*

tained to be of worth. So with my teachings, I see how in *various quarters, the material which I have won with so much toil and care is being openly purloined with the greatest assurance.* In one case, even, a professor and court-physician has not hesitated to reprint word for word whole passages from some public lectures I delivered about ten years ago, and to expressly represent the matter as being the product of his own brain!

The fact is, my opponents seem to be everywhere endeavouring *to rob me of my discoveries.* In these circles, it is evident, the flame of explanation which my hand-book has kindled, begins to be found disagreeable. All the more, then, am I indebted to those friends who with unremitting sacrifice are helping me to further propagate my teachings. I beg them to continue extending me this support, that the *self-dependence* and *equal rights of the New Science of Healing* may be ever more clearly recognized.

It will doubtless interest many foreigners, if I mention here the fact that my hand-book has now appeared in 25 languages — in German, English, French, Spanish, Portuguese, Dutch, Italian, Russian, Danish, Swedish, Norwegian, Roumanian, Hungarian, Polish, Bohemian, Croatian, Servian, Greek, Turkish, Armenian, Malay, Urdu, Telugu, Tamil and Hindustani (Indian vernacular languages).

To meet a widely expressed wish, I have also added to the volume some illustrations explanatory of the Science of Facial Expression.

Let us hope, then, that this new edition may prove of equal usefulness to the former ones, carrying its explanations in the sphere of therapeutic science to every corner of the world.

24 Flossplatz, Leipsic, January 1894.

Louis Kuhne.

PREFACE
to the Fiftieth German Edition.

Forty-nine editions of my hand-book have already appeared in rapid succession, and now follows the fiftieth, thoroughly revised and greatly enlarged edition. The present work is issued in response to the desire of a large section of the public, which places undivided confidence in my discoveries: the doctrine of the *Unity of Disease*, and of the *Science of Facial Expression*. This new edition is published with a view to opening up fresh paths for a right understandig of the New Science of Healing, to adding new disciples to old friends, to aiding in spreading the light, which must one day everywhere penetrate the darkness now obscuring Nature's definite and immutable laws.

In a number of exhaustive chapters, I explain how all diseases, let their names be what they may, always arise from one and the same cause. Here again the principle taught by me of the unity of the macrocosm finds application. What mankind, what the orthodox medical school, understands by „diseases", concentrates itself according to my researches, in a single focus - in *one single* disease. All the so-called diseases are merely variable forms, changeable conditions, which though expressing themselves externally in different ways, are by no means independent, each a disease for itself. In view of this fact, the enumeration of all the hundreds of morbid conditions

To promptly diagnose the diseases of the human body, to guard against these diseases, supported by absolute proofs to preach the plain truth about the natural law already referred to, which affords the key to a rational system of healing disease and of living correctly, and finally to spread a more general knowledge of the *self-dependence of the New Science of Healing*—this is the purpose of the present work, which has now been translated into twenty-five languages.

It is intended to form a true monitor, guide and adviser for all those, who perceiving the natural process going on around us, wish help and advice. Sincerely do I hope that my book may fully serve its purpose, and thus prove itself a true blessing for suffering humanity.

24 Flossplatz, Leipsic, April 1 st 1899.

Louis Kuhne.

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Part I.

What led me to the discovery of the New Science of Healing?

(A Lecture.)

Ladies and Gentlemen:

IT is characteristic of human nature, that anyone who thinks he has discovered something new and original feels an irresistible impulse to preserve his discovery in order finally to communicate it to his fellow-men.

Ambition and vanity have no doubt a share in creating this desire; but fundamentally it is thoroughly defensible and truly human. The truth must be proclaimed even should one in general despise all show and glitter, and find little but weariness and vanity amidst the bustle of daily life. To this natural law I bow also, when I now endeavour to communicate to you the results of my incessant labours, extending over a period of upwards of thirty years. True, it might be wiser were I to entrust my discoveries to mute paper only, and look to future generations for the judgment. But in the work to which I have devoted my life, it is not a matter merely of knowledge pure and simple; we are here also concerned with the actions deriving from this knowledge, in other words, with the practical realisation of the facts learned.

If, therefore, I would have my teachings spread amongst my fellow-men and handed down to future generations, if I would not die stigmatized as a quack, then I am under the necessity of exhibiting, proving and communicating to others both by means of instruction and demonstrations on living subjects, the truths I have discovered.

To such a large company as I have now before me, however, the presentation of patients is impossible, and I must therefore content myself with explaining my views in words, to the best of my ability. And first let me briefly relate what led to the formulation of my system of cure.

I had always felt a special love for nature. There was no greater delight for me than to observe the life of the field and forest and the conditions under which plants and animals live and thrive; to trace the workings of our great mother, Nature, on the earth and in the sky, and to apprehend and establish her immutable laws. I was ever desirous of hearing what able investigators, like Prof. Rossmässler, had discovered; and this long before I had any thought of devoting myself especially to the art of healing. To the latter step I was forced by the strong hand of necessity, that teacher and educator both of nations and individuals.

Shortly after I hat completed my twentieth year, I found my body refusing to perform its functions, and I experienced violent pains in my lungs and head. At first I sought the aid of regular practitioners, but without result. Neither did I, in truth, feel much confidence in them. My mother, who had been infirm and ailing for many years, had again and again warned us children against "the doctors", saying that they alone were to blame for her misery. My father, too, had died of cancer of the stomach whilst under the care of physicians. It was about this time, in the year 1864, that I read about a meeting of disciples of the Nature Cure, the system of curing diseases by natural

means. The matter interested me, and on seeing the advertisement a second time, I attended the meeting. It was a band of sturdy hearted men who gathered round our never to be forgotten Meltzer. Very diffidently I asked one of those present what I ought to do against shooting pains in the lungs, from which I was then suffering. Very diffidently—for my condition of chronic nervous excitement was such, that I could not possibly have spoken loud in the presence of a number of persons. He prescribed a compress, which had an immediate and beneficial result. Thenceforward I attended these meetings regularly. Some years later—it was in 1868—my brother become seriously ill, and the Nature Cure, at the elementary stage of development then reached, was powerless to aid him. We happened, however, to hear of successful cures by Theodor Hahn; my brother resolved to consult him, and after a few weeks returned home much improved in health. I likewise was ever coming to see more and more clearly the advantages of the natural method of cure, and even at that time felt fully convinced of the essential truth of the system.

Meanwhile my own ailment had not been quiescent. The germs of disease inherited from my parents had thriven apace, especially since new causes of sickness had been added to the older diseases by the medical treatment, I had formerly undergone. My condition gradually grew worse and worse, till at last it was simply unendurable. Hereditary cancer had appeared in the stomach, the lungs were partially destroyed, the nerves of the head were so irritable that I found relief only out of doors in the fresh air; and as for quiet sleep or work, that was quite out of the question. To-day I can confess that well-fed and ruddy cheeked as I then looked, I was in reality but a wretched Lazarus through and through. Yet I most scrupulously followed the course prescribed by the Natural Method as then understood. Baths, packs enemas, douches, everything,

in short, I employed, without attaining more than an alleviation of the pain. At this period, through observations made in free nature, I discovered the laws upon which the method of cure now practised and taught by me is based. I commenced, as a trial, with a course of cure for myself, and constructed the most practical appliances I could for the purpose. The experiment succeeded. My condition improved from day to day. Others who followed my advice and observed the same course, were also satisfied. The apparatuses which I had made answered their purpose capitally. The diagnoses of actual diseases and the prognoses of coming ones, as yet unnoticed by the person affected, though the disposition was to be traced, invariably turned out correct. I felt assured that wy discoveries were not mere self-deception. Nevertheless, when I spoke of them, my views were generally met with incredulous astonishment, apathetic indifference, or scornful rejection; and this not only as concerned orthodox medical men and believers in the drug-system, but also, and indeed especially, on the part of disciples of the Natural Method of Cure, sometimes even from its best known representatives. In the cause of suffering humanity I had placed my apparatuses gratis at the service of some of these practitioners. Without giving them a serious trial they were set aside as useless, to moulder amongst dust and cobwebs.

I thus became forcibly aware that it did suffice to establish a theory of the origin and course of disease, and its cure, and to construct appliances for the treatment of the sick; that it did not suffice to discover a new and infallible method of diagnosis and prognosis, founded on the nature of the human organism itself; that it did not suffice to exhibit the success of the new method of cure in my own person, and in the case of my relatives, friends and acquaintances. On the contrary, I perceived clearly that I should have to appeal to the general public itself,

and by effecting a large number of striking cures, prove the superiority of my system over allopathy, homeopathy and the earlier hygienic method. This alone could secure for me the conviction of all classes, that my method was the true one, based upon the laws of nature.

This inward persuasion gave rise to a severe struggle. For if I decided to devote myself to the practice of the new art of healing, I should be obliged to give up my factory, which had been 24 years in successful operation, in order to devote my undivided energies to another calling, which at the outset, at all events, would bring me but scorn, obloquy and financial loss. For years the struggle endured between reason, which deterred me and conscience which urged me on to the fulfilment of my inner vocation.

On October 10th, 1883, I at length opened my establishment. Conscience had triumphed. Exactly what I had foreseen came to pass. During the first few years my establishment was hardly visited at all, although some successes were attained which were remarkable enough to have attracted attention. Then patients gradually began to come; at first merely for baths, later, also some for the cure. In time patronage increased, especially from other towns, for nearly everyone treated by me became a voluntary promulgator and agent. My method of curing and new system of diagnosis, *the Science of Facial Expression,* proved successful in thousands of cases, and I was enabled to save many from serious danger by foretelling future illnesses. On this latter point I lay special stress, for thus alone shall we be able again to rear a really healthy generation.

The truth of my discoveries has been confirmed in every instance, my experience has naturally been materially widened during the past eight years; and my own health, which formerly seemed past recovery, has so greatly improved through a consistent observance of the new method, that to-day I feel fully equal to the exertions imposed upon me by

an extensive practice. This has only been rendered possible, however, through my thinking out, after long reflection, a new manner of taking the sitz-bath. This has proved so effective, that I can with certainty affirm that every disease, whatever name it may bear, is positively curable. *I say, every disease, not every patient.* For when the constitution is too far undermined, and in particular when the system is permeated with poison from long use of medicine, my method can, indeed, alleviate the pain, but not always save, or completely cure the sufferer.

I appear before you, ladies and gentlemen, with the proud and joyful consciousness, that after struggling against physical ruin for nearly a quarter of a century, I have saved myself; and at the same time and to the benefit of the public, have found out the real cure of disease, long sought in vain by the most eminent minds. To speak thus may seem vain and self-sufficient. But experience has proved in every case, even where it was not permitted me to save the patient, that my theory is absolutely true and sound.

What led me to my discoveries was an empirical method, based on the strictest and most careful observation and research, and on systematical experiments. And though I may be called a quack and be reproached for lacking the regular professional training qualifying for the practice of my present vocation, I can bear all with perfect tranquility and undisturbed equanimity. For even the greatest benefactors of mankind, and especially the great discoverers and inventors, have almost without exception been so-called quacks and laymen—to say nothing of the farmer Priessnitz, the carrier Schroth, the theologian and afterwards forester Franke ("J. H. Rausse") and the apothecary Hahn, whose clear minds and strong wills have brought about a new and better art of healing.

In what relation does the New Science of Healing stand

to the traditionary systems of Allopathy, Homeopathy and the earlier Natural Method?

I propose to criticise these methods of cure and to set their failings and weak points, (which they have in common with all that is human), in the proper light; but only so far as this is necessary for the public good and for a clear understanding of my explanations. Every one is free to accept and follow what he holds to be best. But for a right understanding of my theory, it is needful to know in what particulars it agrees with the systems heretofore followed and where it differs from them, so that we may determine wherein its originality lies and what is its absolute or relative value.

With *Allopathy*, the new art of healing without drugs or operations has but one point in common—that the subject of both is the human body. For the rest, their aims and means are diametrically opposed. In fact, I consider the whole scheme of poisoning patients by medicine, latterly so decidedly on the increase, as one, if not the chief cause that thoroughly healthy persons are now hardly to be found, and that chronic diseases are multiplying with fearful rapidity. The proper and timely intervention of the new art of healing will render surgery almost wholly superfluous.

Homeopathy I welcome as a brave ally in the crusade against the fatal faith in medicines. With its minute doses wherein the chemist is unable to discover a trace of the drug; and the stress which it lays on the choice of a proper diet, it forms a transition, a stepping-stone, to the new art of healing. With reference to diet, however, it formulates no fixed, clear principles, and my experience proves even its minute doses of medicine to be not altogether harmless.

The Natural Method as hitherto applied, which far excels the other systems, is the foundation of the new art of healing without drugs or operations. I have found it

necessary, however, to follow more the great discoverers and founders of the system—Priessnitz, Schroth, Rausse and Theodor Hahn-rather than its later representatives. The latter, in their excessive zeal for individualization, run the risk of degenerating into artificiality and of deviating from the clear and simple paths of nature. The earlier Natural Method lacks insight into the character, the nature of the morbid matter, and a knowledge of the natural laws according to which such matter changes its position in the body and settles down in certain parts. In other words it lacks insight into the true nature of disease in general, and thus of each form of disease in particular; knowledge of the ever existing, though hitherto unrecognized, law of nature upon which all my discoveries are based. Moreover, it calls to its aid the orthodox system of diagnostics, although it is well known that it has no need of such "exact" diagnosis; thus it still clings to old prejudices. The new science of healing, on the contrary, teaches a wholly different kind of diagnosis following from the nature of the disease itself, made by simple examination of the face and neck—*the Science of Facial Expression.**

The Natural Method commands a wealth of forms in which water may be applied: packs, enemas, douches, shower-baths, half-baths, whole-baths, sitz-baths and steam-baths of various descriptions. These many remedies, however, prove in part superfluous and confusing when once insight into the true nature of disease has been gained. The new art of healing simplifies the application of water as much as possible.

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* See **"The Science of Facial Expression"**, by *Louis Kuhne.* A hand-book of a new system of examination to find the state of the disease, based upon original researches and discoveries. Fully illustrated. Has appeared in German, English, Spanish and Telugu. Price of the English edition, paper-cover 10 s., elegantly bound 11 s. Louis Kuhne, 24 Flossplatz, Leipsic.

Whilst on the ordinary Nature Cure System the diet, at all events very often, has been wholly unregulated, or arbitrarily accommodated to the traditionary mixed diet, the New Science of Healing prescribes a non-stimulant system of dietetics based on natural laws and accurately and clearly defined.

As you see, the deviations from the usual methods of the Nature Cure System—which, I repeat it again, has nevertheless, worked wonders—are so great, that I feel quite justified in giving my theory and practice a new name, that of the New Science of Healing without Drugs and without Operations.

I cannot enumerate in detail all the experiments I tried, before my system was fully developed; that would doubtless be interesting to many, but would not be of practical value. It is, in fact, a special advantage when one can make straight for the goal and avoid the many wrong paths which hat to be traversed, before the right road was discovered.

After these prefatory remarks, let us turn to the matter itself.

The fundamental question, which I must first examine and on which the entire method of cure is based, is this: "*What body is, or is not, healthy?*" Current opinions are very different. Who has not had experience of this? One asserts that he is quite healthy, only a little rheumatism troubles him; another suffers only from nervousness, but is otherwise health itself. Just as if the body consisted of separate sections, one quite separated off from the other and hardly having any connection with it at all. Strangely enough, this view is supported by the orthodox method of curing. For the latter in many cases only regards one individual organ, often scarcely noticing the neighbouring ones. Yet it is an undoubted fact, that the entire human body is a united whole, the parts of which are in constant reciprocal relation, so that sickness in one part must have

an influence on the other parts. Daily observation shows you that such is the case. If you have the toothache, you are hardly capable of work, and relish neither food nor drink. A splinter in the little finger has a similar effect; pain in the stomach robs us of all desire for physical or mental work. At first this is only the immediate influence transmitted by the nerves. But we perceive how one trouble directly induces others. Should it continue long, the consequences will be permanent, whether they are perceptible to us or not. A body can therefore be healthy only when *all* its parts are in their normal condition and perform their work without pain, pressure or tension. But all the parts should also possess *the form best adapted to their purpose,* which likewise best corresponds to our ideas of beauty. Where the external form is abnormal, such state has been caused by definite influences. But extended observations are necessary to determine the precise normal form in every case; we have first of all to find really healthy persons as objects of study, from whom to learn the forms. But it has now become well-nigh impossible to find such. To be sure, we speak of strong, healthy persons, and many declare that they belong to this class; but if we inquire more closely, each one has some trifle—as he expresses it—to mention, some slight pain, an occasional headache, toothache now and then, and so on, which proves that absolute health is out of the question. For this reason comprehensive study is necessary in order to learn the normal shape of the body. Nevertheless something may be done by comparing sick persons with the approximately healthy, and from subsequent explanations you will see still more clearly how it is possible.

I have mentioned the fact that disease alters the shape of the body; I will now give you some familiar instances. To begin with, let me remind you of persons suffering from obesity, whose bodies take on the well-known rotundity:

and in contrast to them of lean persons, on whose bodies hardly any fat is deposited. Both are undoubtedly morbid symptoms. Further, there is the loss of the teeth, which alters the whole face; gouty affections, in which knots are formed; articular rheumatism, in which there is a swelling of entire parts of the body. In all these cases the alterations are so strikingly apparent that the veriest novice recognizes them. In other forms of disease they are less evident to the eye, yet I can remind you of many more well-known cases. You know that a healthy person has a clear, quiet eye, and that his features are not distorted. But you would find it hard to determine when the face gets the proper expression; and you will unhesitatingly admit that one person has a sharper sense of observation in this matter than another. For instance, we often meet a person whom we have not seen for years. We find that he has changed considerably for the worse during this time, though we are not able accurately to define the nature of this change. And nevertheless these transformations, through which the body gradually loses its beauty, have a deep significance, to which I shall return further on. From all this it is evidend that diseases reveal themselves by changes in the body and more especially in the head and neck; and that it is an important matter to recognize and explain these alterations.

Whether everyone will succeed in doing this, I will not decide; much perseverance and assiduous practice are needful for making observations. Those wishing to go deeper into the *Science of Facial Expression,* I would recommend to procure *my handbook* which forms a clear guide to the subject.

To-day I will call your attention to another touchstone of health.

Since the entire body is effected in every case of illness, we are able to test the state of health by examination of the operation of any organ. We do best,

however, to choose those organs whose functions may be most thoroughly and readily tested and such are the organs of digestion. Good digestion is a sign of good health, and when it continues in perfect operation day afther day, the body is undoubtedly quite healthy. These observations can very easily be made in the case of animals. It is from what is left over, that we can best judge how the process of digestion has been performed. The remnant matter should be ejected from the body in such form that the latter remains perfectly clean. This you can observe every day in the case of horses and birds in a state of freedom. Pardon my further elucidating this delicate matter; but when speaking of health and sickness everything must be called by its right name.

The end of the rectum is most admirably formed, so that if the excrements are of the proper consistency when they reach it, they are ejected without difficulty and without soiling the body. I have dealt with this subject more in detail in my little pamphlet "Am I well or sick?"*

So called toilet-paper is an acquisition for sick humanity; perfectly healthy people do not in reality need such. Do not mistake me; I do not mean that anyone who is not in really sound health, should imagine that by his rejecting this resource of civilization he has achieved some wonderful victory! On the contrary, it is just for such unhealthy persons that it is necessary, so that cleanliness may be maintained. Now, from his digestion everyone can easily learn whether he is healthy or not. The test alluded to is a highly important one, and I do not hesitate to assert this positively, undisturbed by the mockery of sceptics.

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* **"Am I well or sick?"** by *Louis Kuhne.* A vade-mecum and adviser for everyone. Published in German, English, French, Spanish, Portuguese, Dutch, Italian, Swedish, Danish, Hungarian, Urdu and Telugu (Indian vernacular) languages. Price of the English edition 6 d. Louis Kuhne, 24 Flossplatz, Leipsic.

Furtunate, indeed, is he whom the above mentioned criterion informs he is in full health. A healthy person always feels perfectly well; he knows nothing of pain or discomfort so long as they are not from external causes; in fact he never feels that he has a body. He delights in work, and enjoys such activity until he grows tired, when he again finds full happiness in sweet repose. For him it is easy to bear mental anguish; his body yields for his assuagement the soothing balm of tears, of which, in such cases, even a man need not be ashamed. A healthy man is not troubled by family cares and anxieties, for in himself he feels the strength to provide for his loved ones. A healthy mother finds happiness in bringing up her family, for she can nourish her little ones in the manner nature intended, and if darlings are healthy too, what a blissful life is theirs! Their faces are wreathed in happy smiles; none of that continual restlessness, grumbling and crying; in short, the education of such children is a delight, especially as they will be far more susceptible and obedient to their teacher's influence.

To recapitulate briefly: Natural inclination drew me to science; severe sickness and sad experience with orthodox physicians led me to the Nature Cure. My perceiving that even the latter, as hitherto applied, was powerless to cure my serious chronic complaints, forced me to further researches. Constant observation of living nature revealed to me the necessary alteration which the external form of every organism undergoes through disease; and the manner in which this alteration takes place, and the way in which it again disappears when the disease is cured, finally taught me what disease is and how it arises.

It will be the purpose of my next lecture to present to you the results of my researches and to tell you what, as I see it, the nature of disease is, how it arises, what is its purpose and how it must be cured.

How does Disease arise?—What is Fever?

(A Lecture.)

Ladies and Gentlemen:

WHAT is disease? How does it arise? How does it show itself?

These are the questions which I propose to discuss before you to-day. If you have read in the announcement the further question, "What is fever?" you will soon see how it is answered together with the others.

The answers to the above questions are important not only from a theoretical, but even more from a practical point of view; for it is not until we have gained a clear insight into the nature of disease, that we are in a position to arrive at once at the real method of cure, and so obviate all empirical groping about in the dark.

The way which we pursue is that in which all natural laws are discovered. We start from observations, draw our inferences from these, and finally prove the correctness of our inferences by experiment.

First of all, our observations must be extended to all symptoms noticeable in sick persons; we shall then have to discover those symptoms which constantly reappear and which occur in the case of every patient.

These symptoms are *essential ones,* and must be taken as a starting point in our enquiry into the nature of disease,

In my last lecture I have already remarked that in certain diseases striking alterations occur in the form of the body; and it was this circumstance which caused me to observe further, whether such alterations did not occur in the case of all patients.

And this, as observation has proved again and again, is in fact the case; the face and neck are especially affected by such changes, which can therefore be most easily traced in these parts.

For years I have made it my study to find out whether my individual observations agreed in all cases, and whether with the alteration of the outward form, the state of the health also changed in every case; and thus it has been invariably.

Thus I came to the firm conviction, that there must be a particular, normal form for every body, which is always to be seen in health, and that every change from this normal form is the result of disease. It became clear to me that from the changes of form in the neck and face, a trustworthy idea of the state of health of the individual could be gained; and this led me to the discovery and application of my new system of diagnosis, the *Science of Facial Expression,* which I have already used in my practice for over 15 years.

The alterations which we perceive in the neck and face, take place in the corresponding parts of the abdomen and rump in a still greater degree, because, as we shall see further on, they originate in the abdomen itself; so that merely by examining the neck and face of the patient, we gain an exact idea of the condition of his bodily condition as a whole. These external alterations in the neck and face are perceptible, firstly, when the morbid matter has penetrated in between the muscular tissues, whereby the body, which is as elastic as india-rubber, becomes distended (this condition is the less dangerous); sec-

ondly through increased tension, caused by the induration of the separate tissues. You will be most readily able to form an idea of this state, if you think of a sausage. Filled as it usually is, it can be bent in every direction. If it be stuffed fuller and fuller, as long as the skin will hold, the sausage will become so tense and hard that it can no longer be bent at all, except by bursting the skin. Similarly the body can expand only up to a certain limit, when tension of the tissues takes place. Such tension is very distinclyt remarked when the patient turns his head and neck. This stage is worse. If now the room between the tissues no longer suffices to receive deposits of foreign matter, the latter is deposited in lumps beside the muscular tissues under the skin, being then distinctly visible on the neck. Where we find *such lumps on the head and neck* we do not err in concluding from these indications, that there is a far greater number of such lumps in the corresponding parts of the trunk. On the abdominal covering these lumps may in such cases be easily felt and seen in all sizes. For the lumps in the neck are not formed until after lumps are deposited in the abdomen. A precise exposition of the nature and origin of these lumps, which until now have never been explained, I will give subsequently when dealing with diseases of the lungs. On the other hand, we see in lean patients how the normal tissues of the body are actually displaced by morbid matter, so that only the remains of the former, shrivelled together as it were, are still to be seen amongst the foreign matter.

The various abnormal discolorations of the skin also form a sure aid in the recognition of diseases, and in certain illnesses are never wanting.

The two accompanying figures, taken from life, show you a patient suffering from heart disease complicated by dropsy, first as he was when he applied to me, and secondly as he appeared four months after be-

ginning my cure. You clearly see the great changes in form which took place in the patient during this period. He was, as you perceive, heavily encumbered with foreign matter, but within three months by the aid of my method had cleared his system of a great quantity of this matter through the natural excretory organs, as may distinctly seen from Fig. 2. I cannot here do more than touch upon the *Science of Facial Expression,* as to go into details would lead us too far from the proper theme of my discourse.



Fig. 1.



Fig. 2.

But what, now, do these alterations in the form of the body teach us in regard to the nature of disease? In the first place, there is no doubt that these elevations and swellings result from the deposit of matter of one kind or another. At first, one does not know whether this is matter that the system can utilise, and which has simply been deposited in the wrong place; or whether it is matter which does not belong to the body at all. Nor do we know, at first, whether it is the matter that causes the disease, or whether the latter is the cause of the deposit. Further observation, however, brings us nearer the truth. For the deposits almost always begin on one side of the body, and are then much more abundant there than on the other;

and this is invariably the side on which we are accustomed to sleep. We thus see that the morbid matter obeys the law of gravitation, settling, as it were, at the bottom. But this side always being the more diseased, it follows that the matter is the cause of the sickness; otherwise the disease would assuredly sometimes begin on the other side. Further on, more proofs will be given in support of this.

We may also conclude from this that the said matter must be foreign matter, that is, such as does not belong to the body, at all events not in its present form. For we cannot assume that nutritive material follows the law of gravitation in the body, otherwise deposits on one side only, would take place in the healthy body as well, if the person were in the habit of sleeping regularly on the same side.

Besides, the system itself evidently endeavours to throw off the matter. *Ulcers* or *open sores* are formed, or there is *violent perspiration*, or *eruptions break out*, these being the means whereby the system tries to rid itself of the morbid matter. Should it succeed, a pleasant feeling of relief follows that of sickness, provided, of course, that enough matter has been expelled.

We now come quite naturally to the definition of disease. **Disease is the presence of foreign matter in the system.** For the correctness of this definition there is an infallible test. If, after that which we have designated as morbid matter has in a suitable manner been removed from the system, the disease itself disappears, and the body at the same time regains its *normal form*, the truth of our definition has been established.

This proof has already been given, and in the subsequent lectures I shall show you a number of experiments which have been made.

But now let us approach the question as to what may

be the nature of this foreign matter, and how it gets into the system.

There are *two passages* through which matter can be introduced into the body – by the nose into the lungs, and by the mouth into the stomach. Each of these passages is guarded by sentinels, who are not, however, thoroughly incorruptible, and sometimes let things pass which do not belong to the body. These sentinels are the nose and the tongue, the one for air, the other for food.

As soon as we fail to promptly obey the senses of smell and taste, they grow more lax in the fulfilment of their duty, and gradually allow harmful matter to pass unchallenged into the body. You are aware how one can become used to sitting in dense clouds of *tobacco-smoke* and inhaling it just as if it were healthy fresh air. The tongue has been still further corrupted, and we know that it can gradually be habituated to most unnatural food. Need I remind you of the *different dishes and beverages* which we now think indispensable, all of which were unknown some centuries ago? To these the present generation has grown so accustomed, that it would rather renounce a natural diet than give them up.

Our lung-diet is, on the whole, not so degenerate as our stomach-diet, as the former admits of no luxurious outlay. As a rule the purest air, even to day, still suits us best, whereas a hearty dish of porridge, for example, such as furnished our ancestors with blood and strength, is really relished by very few.

In order to illustrate still more plainly how the digestive organs are slowly undermined by the unnatural demands put upon them, I will adduce the following example. A dray-horse that can draw 50 cwt. with ease, may be made temporarily, with the aid of the whip, to drag a much greater load, say 80 cwt. If his master, however, having seen that the horse could draw the 80 cwt., were to give

him this load daily, the animal might be able to draw this increased load for a short time, but the over-exertion would soon prove injurious. He would drag the load with increasing difficulty, until finally he could no longer draw even 50 cwt. The animal has been overworked, which is also outwardly apparent from his spavined legs and other symptoms. It is exactly the same with the human organs of digestion. For a long, very long, time they will perform work far exceding their natural functions, continually spurred on by the stimulants of our times. But their natural powers are gradually undermined and then they can only partially perform the work allotted to them. The transition from health to disease goes on so imperceptibly (often taking ten, or twenty years, or more) that the patient does not notice the alteration for a long time.

It is very hard to say what amount of food forms the limit which may be borne by a diseased stomach. Often for instance, *one* apple will benefit a weakly patient, whilst *two* would be injuriuos. *One* apple the debilitated stomach can digest, two would be too much. All *excess is poison for the body.* We must never forget that everything we put into the stomach has to be digested. Even a healthy stomach can really digest only a certain quantity of food. Anything beyond this is poison for it, and if not excreted goes to form foreign matter in the body. Moderation in eating and drinking is therefore the basis of lasting health.

Now what becomes of such foreign matter?—I call it foreign matter because it is foreign to the system.—The system attempts to expel it, and this in the ways designed by nature for the purpose. From the lungs it is again expelled directly by exhalation into the surrounding air. From the stomach, the bowels conduct it to the outside; or it first enters into the blood and is then secreted as perspiration, urine and expired air, that is through the skin, the kidneys and the lungs.

Thus the system takes care in the most obliging manner that our sins have no evil effect. Of course we must not require too much. If we overburden the system with such secretory work, it becomes unable fully to perform its functions and must find room for the foreign matter in its own interior. But such matter is useless for renewing the waste of the body, and is in fact positively harmful, as it impedes the circulation and hence the digestion. The foreign matter is gradually deposited in various places, especially in the neighbourhood of the secretory organs, that being the direction it takes.

The beginning once made, the deposits accumulate rapidly, unless the manner of living be at once changed.

Alterations in the form of the body now commence, but are at first visible only to a practised eye. The body in this state is already diseased, though its disease is *chronic, or latent,* and unaccompanied by pain. The disease develops so slowly that the person affected does not notice it; only after a considerable period does he become conscious of a disagreeable change in his condition. He no longer has the same appetite, he is incapable of the same amount of physical exertion, he cannot do so much continuous brain-work, and so on. His condition is still supportable, so long as the secretory organs continue to perform their work, that is, so long as the bowels, kidneys and lungs are active and the skin exudes warm perspiration. But whenever these functions relax, he at once feels sadly dissatisfied with his physical condition.

The deposits themselves begin, as we have seen, near the organs of secretion, but soon commence accumulating in remoter parts, especially in the upper portions of the body. This is most distinctly perceptible in the neck. There, in the passage-way, the alterations may at once be seen, and at the same time tension observed when the

neck is turned, from which we can find out from which side the matter has forced its way up.

Before speaking further of the consequences of this accumulation of matter, I must remark that now-a-days the entire evolution of the disease can but rarely be watched from the beginning, for most human beings enter the world laden with morbid matter. And just here, I may add that this is the reason why hardly any child enjoys immunity from the so-called *children's diseases*. These are, in reality, a sort of cleansing process, this being the way in which the system endeavours to rid itself of the foreign matter. But of this in detail in my next lecture.

The foreign substances which at first are chiefly deposited in the abdomen, finally spread through the whole body and hinder the normal development of the organs. Even should the organs respond sometimes by increasing in size, they can nevertheless attain to no perfect development, for wherever foreign matter is present, space is lost for nutritive material. Besides, as the circulation also is impeded, the process of alimentation is checked, and the organs become smaller, despite, or rather by reason of, the foreign matter deposited in them.

This matter may for a long time remain perfectly quiescent or chronically latent; but under favourable conditions can also easily suddenly change in form. This foreign matter consists almost exclusively of substances which are soluble and decomposable; substances which are subject to disintegration, breaking up to yield new formations under the right conditions; substances which are subject to fermentation.

Now fermentation often really occurs in the body and is of the highest significance.

In all such fermentation microscopic fungi are active, and a striking change takes place in the fermenting matter: it increases markedly in bulk.

Warmth is always generated by fermentation; the more violent the fermentation, the greater is the increase in temperature. This warmth is produced by the friction of the masses against each other and against the body, and likewise by the process of fermentation itself, and the changes in the fermenting matter accompanying it.

Under proper conditions, every process of fermentation can be caused to retrogress upon its own course; and this applies also to all the changes in form caused by such fermentation. This is a fact which has hitherto never been properly understood. But I need merely remind you how in nature ice melts into water, how the latter is transformed by great warmth and wind into vapour, aud how this, vaporized and invisible, then again condenses and appears to the eye as a cloud, pouring down as rain, snow or hail to refill the rivers and streams, and by severe cold to be again congealed to ice. And all this has been brought about by mere *differences in temperature*. Constantly increasing warmth has brought about the changes in the state of the water, and increasing cold has caused a retrogression of the process. A similar thing takes place in the development of foreign substances in the body, and similar conditions produce a retrogressive metamorphosis and expel them from the system.

What the exact nature of the little vegetable organisms, the ferments, is, is of but secondary interest for us; but it is important to know that they can develop only where there is a suitable soil, that is, where substances are present which are ready to pass into decomposition.

Where such are present, only the right kind of weather, or some other exciting cause, is needed to give rise to fermentation. Such fermentation is also set up in the human system at the first instigation, as soon as there is sufficient foreign matter ready to pass into decay or decompose. Such chance exciting cause is a *change of weather* (hence

what are popularly known as *colds*), the consumption of food specially apt to ferment, which remains longer than it should in the digestive canal, *anger, fright, strong emotion, a shock, etc.*

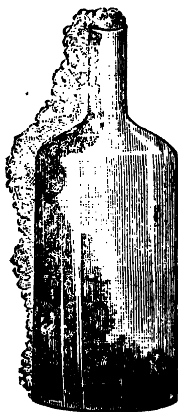
My observations show that fermentation always commences in the abdomen. Often it only causes diarrhœa and is got rid off; but frequently, particularly where there is constipation, the system does not succeed in its attempt at speedy self-help, and fermentation continues, especially in those parts where foreign matter has accumulated.

The case is like that of the bottle shown opposite; the bottom admits of no outlet, and the fermenting matter therefore pushes its way upwards to the mouth. Thus we we first feel the effects in the upper parts of the body, we get a headache. The fermentation produces warmth and we are soon conscious of the rise in the temperature of the blood. This is what we call fever. Fever can therefore only occur where foreign matter is present and the natural exits are stopped; that is (1.) where there is no regular motion of the bowels, (2.) where the urination is deficient, (3.) where the pores are obstructed, (4.) where the respiration is weak.

From all this we get a very simple explanation of fever, which long years of observation and experience prove to be true.

Fever is fermentation going on in the system. We shall, therefore, best comprehend the symptoms exhibited by fever, by forming a correct picture of the processes of fermentation, as they may frequently be observed outside of the human body. For instance, if a bottle of freshly brewed beer be allowed to stand a few days, an alteration will be noticed in the fluid, which is generally designated by the term fermentation. This much we know of the nature of fermentation: it is a decomposition, a sort of decay, during which, as already mentioned, little vegetable organ-

isms called *bacilli* are developed. But it must be noted that these bacilli not only, as is often assumed, propagate themselves by reaching the fermenting mass from without and then spreading there further; they are also originated *by the transformation of the mass,* thus being *themselves only transformed matter, or a product of fermentation.* Through the *process of fermentation, or decomposition,* the original mass is altered in form. Thus living animal bodies are produced from food and drink, transformed by the fermentive process of digestion. That is, the germs are the product of the food



decomposed by this fermentive process of digestion. In this manner we naturally arrive at the conclusion, that all life is only a continual change under given conditions, and that without the processes wich I term fermentation, it could not be imagined at all.

The outward manifestations of fermentation are the following: First, the fermenting matter separating from the fluid is deposited on the bottom of the bottle. Now, if the bottle is shaken, or a change in the temperature occurs, the deposit at the bottom begins to move and exhibits a tendency to spread. In spreading it moves upwards, and

always in proportion to the amount of fermented matter deposited at the bottom and the temperature.

Let us look more closely into the cause of fermentation. Everybody knows that wine and beer are bottled and put in a cellar to prevent fermentation as far as possible. The cellar temperature is pretty much the same both in winter and summer; no sudden changes of temperature occur, so that the chief cause of quick fermentation is wanting. Likewise in the human organism fermentation takes place much *more quickly* in warm weather.

We perceive how in the South and the tropics various acute fevers are always breaking out, whereas in our cooler climes we find chronic diseases prevailing. This is particularly on account of the more rapid and greater changes of temperature in hotter climates, where by day the thermometer stands at 100° Fahr., and at night at 40°; whereas in our northern countries, the difference between the day and night temperature seldom exceeds 22° Fahr., and is usually less. Fevers often occur with us in spring, the reason being that then we find the greatest differences in temperature. Some may find it strange that children especially should be subject to acute illnesses, the familiar *children's diseases*, while later in life chronic forms of disease mainly prevail. The above-mentioned change of temperature is here aided by the greater vigour of the youthful organism, which is still so great that it needs but little or no external exciting cause to stimulate the system to make a vehement *struggle for health, i. e.* by an acute disease to rid itself of foreign matter.

Now the same phenomena which take place in the bottle are observable in the human body. Here, too, the fermenting matter accumulates in the *lower part* of the trunk, and is then set in motion by some *change in the weather, external shock or mental excitement.* Here, too, the movement is upwards; the fermenting substances have a tendency

to spread and press against the skin covering the body. As long as the skin remains impervious, the pressure meets with resistance. Thus friction arises, and consequently heat is developed. This is the explanation of the well-known fever-heat.

In the same way, it is easy to explain why a person in a feverish state, has a somewhat greater circumference of body than usual. For the skin, being elastic, yields to the pressure of the fermenting matter, and the greater the pressure, the greater the *tension of the skin.* When the skin has reached its extreme tension, so that it can yield no further, the fever is at its height and the danger greatest. For as the fermenting masses still have a tendency to expand and are unable to escape to the outside, they make room for themselves inside. The body may be said to inwardly burn and death is the unavoidable result—of course, only if the skin remains impervious. If we succeed in opening the outlets, the danger is removed, for then the fermenting matters find an exit, leaving the body in the form of perspiration. The interior of the body is now relieved and the heat and tension of the skin immediately subside.

No words are needed to show that the comparison between the human body encumbered with fermenting matter and a bottle filled with such, does not accord in every point. In the bottle fermentation has free vent, the matter can expand in all directions without resistance, until it reaches the surrounding sides. In the human body it meets with impediments everywhere. Every organ opposes its progress and hinders its course. Then it presses, pushes and rubs against the obstructive organ thus producing heat in it and even destroying it, if no outlet be made, or its course diverted. According to the part principally affected, the *disease* is said to be one *of stomach, lungs, liver, heart, etc.* But the part affected in each individual case depends upon

the course taken by the fermenting matter, and this course, again, upon the place and manner of the deposits.

It will, therefore, be my task later on, to show you how the closed skin is to be opened. First, however, I must speak of another symptom. Before the heat begins, we always notice for days, weeks, or even months previously, a symptom, apparently the exact opposite of that described, there is a *feeling of chilliness.* The explanation of this is very simple. It arises as soon as the deposits have grown so considerable, that the blood can no longer circulate properly in the extremities of the body, but is, so to say, compressed all the more in the inner parts, so that great heat arises there.

Matter continues to be deposited—the time varying according to the particular patient—until one of the causes already mentioned, *change of weather, outward shok or mental excitement* occurs, thus causing fermentation to set in. The deposited matter causes disturbances in the circulation and alimentation. The blood-vessels become partially obstructed, especially in their minutest branches, so that the blood can no longer reach the exterior skin. This is the cause of cold feet and hands and of a chilly feeling all over. *Chilliness* is thus a precursor of fever, and we should make a grave mistake were we to leave it unnoticed. If proper treatment be immediately applied, the fever cannot fully develop, but is, so to say, nipped in the bud.

When speaking before of the nature of fermentation, I remarked that in all fermentation little vegetable organisms, called *bacilli*, develop spontaneously. This is the case with fever, and thus the much debated bacillus question finds a simple solution. Whenever the matter which has settled in the abdomen begins to ferment, bacilli develop of themselves in the system; they are the product of fermentation, and likewise disappear of themselves when fer-

mentation ceases and the system is restored to health, *i. e.* when the process of fermentation retrogresses.

It is, therefore, idle to speak of infection through bacilli, in some mysterious manner, without the presence of foreign matter in the system. The question is not how to kill the bacilli, but rather *how to remove the cause of fermentation, the foreign matter.* This done, these little monsters which have caused terror to so many timid minds, vanish as a matter of course. Further on I shall speak more in detail of the dangers of infection (pages 60 - 69).

A few simple examples will more clearly illustrate my statements. Imagine a room left unswept and uncleaned for weeks, notwithstanding the much dirt that collects daily. Very soon *vermin of all descriptions* will take possession of the room and prove so troublesome to the inmates, that every means will be tried to extirpate them. Now, if we attempt to destroy the vermin in the old fashioned way by poison, we shall doubtless kill a large number, but by no means effect a permanent alteration in the state of affairs; for the dirt itself is the actual producer and promoter of the vermin and will continually breed fresh swarms. But we shall attain quite a different result, if we immediately cleanse the room itself of all filth; and by continuing this process we shall deprive the vermin of their proper elements and get rid of them for good and all.

Another example. Imagine the swampy edge of a forest in summer. You all know what an annoyance the *mosquitos* are in such a place. It will be evident to you all that it would be no good using poison to destroy them. True, hundreds of thousands would be killed, but millions upon millions would constantly issue from the swamp. The swamp itself is the breeding ground of the little torments, consequently one must first do away with it before the mosquitos can be annihilated. We know that on dry heights hardly any mosquitos exist. Were one to collect a great number and

carry them up such a mountain with the intention of keeping them there, one would very soon perceive all these insects, so laboriously transported, flying back to their native swamps, the dry mountain height being no suitable place for them.

A third example will render the matter still clearer. You are all aware how in the tropics, where by reason of the greater heat there is far greater diversification and development to be found in the animal kingdom than in the temperate and frigid zones, nature gives birth to the most important and largest number of *carnivora and carrion feeding animals.* Whatever pains might be taken to exterminate them, new generations would always arise to take the place of those killed. Thus you see that these animals flourish only where, by reason of the greater development of life, there is also more putrefaction. If no relief were at hand, the dead animals would quickly poison the air with their putrescence, and render it unfit for the living ones. It is now plain why the principal animals which live upon flesh and carrion, have their home in the tropics and not in the extreme north, where even the reindeer, which lives on grass and moss, can hardly exist.

If, therefore, we should want to exterminate the carnivora and carrion feeders of the tropics, we should succeed only by removing the conditions of their existence, that is, the swarms of other animals there present; the beasts of prey would then disappear of themselves. All other means would be useless. But the smaller the animals are, the more difficult is their extermination: and of this the bacilli afford a most striking example. In order to exterminate them it is of no avail to employ medicaments to poison them; we can only attain their end by removing the cause of their existence, that is by expelling all foreign matter from the body.

In these examples I have shown you how Nature acts on a large scale; and she acts in just the same way on a small scale, for all her laws are uniform. Nor does she

admit exceptions in the case of disease. Precisely as the *vermin, mosquitos, carnivora* and *carrion* feeders appear, live and thrive only where they find favorable conditions, so fever cannot exist without such conditions, that is, it cannot exist unless the system is encumbered with foreign matter, It is only where such matter is present, as we have seen, that by some cause fermentation can arise, which process we call fever.

But when we once know what fever is, it is not difficult to find a remedy. The closed up pores of the skin, against which the fermenting masses press, must be opened, and this can only be done by causing the body to perspire.

The instant the sweat breaks out, the fermenting masses gain a vent, and the tension of the skin and febrile heat both abate.

But with the perspiration, the cause of the disease has not yet been removed. For the fermentation in any given case affects only a part of the matter deposited in the body; the rest remaining undisturbed is continually being increased by new accumulations, ond thus forms an ever-present source of fever, which merely awaits a suitable occasion to break out afresh. Our aim must, therefore, be to bring about the expulsion of the matter still lying quiescent in the body. For this purpose I have introduced the friction hip and sitz-baths which I shall afterwards describe (pages 109—116), by the aid of which the system is excited to expel the morbid matter from the body.

At the same time, everything must be avoided which may disturb the body in its work. The patient must have ample rest, *e. g.* he must not be excited *by being read to, or by conversation.* Even the *noise of the traffic* on the street is injurious, and the chamber should be kept somewhat darkened; also at night, it should not be illuminated. There must be free access of fresh air, however.

Not until there has been a sufficient expulsion of

foreign matter, is the cause of the fever removed and thus the illnes itself cured.

Let us now briefly review the foregoing, in order to deduce some important final conclusions.

In the case of all sick persons, alterations in the shape of the body are perceptible. These alterations are produced by foreign matter. The presence of such foreign matter in the system is disease. This matter consists of substances of which the body has no need, and which remain in it because of defective digestion. The foreign matter is first deposited in the neighbourhood of the secretory organs, but gradually spreads, especially when fermentation sets in, over the whole body. As long as the organs of secretion continue to expel a part of the foreign matter, the physical condition is endurable, but whenever their activity becomes lessened, greater disturbances arise. The accumulation of foreign matter is not painful, being so to speak a latent or chronic process, which goes on unnoticed for a considerable period.

We can best designate the forms of disease resulting from such accumulation, as painless and hidden; they are essentially the same as those generally called chronic or lingering.

The foreign matter is liable to decomposition; it is the real cause of fermentation and forms the soil on which bacili can develop. Fermentation begins in the abdomen, where most of the foreign matter lies, but rapidly spreads upwards. The patient's condition changes, pain is felt and fever sets in. These forms of disease we may term painful inflammatory diseases; they are what are otherwise termed acute.

From the foregoing exposition we must now draw the momentous conclusion: **There is only one cause of disease and there is also only one disease, which shows itself**

under different forms. We therefore ought not, strictly speaking, to distinguish between different diseases but only between different *forms* of disease. It may be remarked in passing, that direct injuries, which are not really diseases in the above sense, are not here included; I shall speak of them in detail further on when, dealing with the Treatment of Wounds.

It is, therefore, the doctrine of the Unity of Disease which I teach and defend, on the basis of the observations laid down in the foregoing.

I have now indicated the way in which I arrived at the conviction—a bold one, as many may think—that there is only *one* disease.

Through observation and inference, we have thus arrived at a statement which is of fundamental importance for the treatment of the sick. But am I able to prove its correctness by facts.

In modern science there is one kind of proof which is preferred to all others and regarded as almost the only convincing one, and that is the experimental. In the case in question the experiment could be carried out only by the similar treatment of all kinds of diseases, when, if our statement is correct, uniformly successful cures must be the result. This proof I have given and continue to give. In the reports of cures, contained in the appendix to my book, you will find the results summarised.

Of course it is impossible here, in such a meeting, to advise and treat patients of all descriptions before your eyes, to exhibit the changes in their condition, in the forms of their bodies, and in their capabilities, and to receive their reports on the progress of the cure. Here I can only engage, in the following lectures, to call your attention to a series of the most familiar, frequent and dreaded forms of disease; to explain in detail their cause, and to follow

the course of the cure; at the same time adducing as many examples as possible from my practice, in order in each case to make clear to you, how each separate disease can be traced back to one uniform cause.

I shall begin in my next lecture with what are commonly known as children's diseases.

On the Nature, Origin, Purpose and Cure of Diseases of Children, and their Unity. Measles, Scarlet Fever, Diphtheria, Small-pox, Whooping-cough, Scrofula.

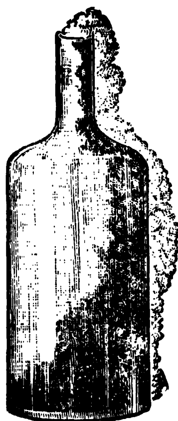
(A Lecture.)

Ladies and Gentlemen:

DISEASE is the presence of foreign matter in the system. This was the chief result at which we arrived from the observations communicated to you in the last lecture. The foreign matter is either present from birth, or is introduced later by the admission of injurious substances. The system seeks to expel this matter through the bowels, lungs, kidneys and skin, and when unable to do so, deposits it wherever it can. In this way the form of the body is changed, as may best be observed at the narrowest part, the neck, and in the face.

Explanatory of this, let us again instance the bottle of ferment already mentioned, as shown in the next illustration. As long as the bottle is open, the fermenting fluid finds free exit. But suppose a hollow elastic cap to be drawn over the mouth of the bottle, allowing no gas to escape. The rubber, at first loose, will very gradually become tighter and tighter, the more space the fermenting mass requires. The increasing tension will very soon lead to an increasing expansion of the elastic cap. You will

have a case more nearly resembling the human body, if instead of the glass bottle, you imagine one with elastic sides, in which the fermenting mass is clearly to be seen. Here you would see how the tension affects the entire bottle, and how changes in the form of the bottle depend solely upon the pressure of the ferment. It is the same with the human body, the only difference being that the whole space inside is not free and open, there being organs everywhere which must first be penetrated or avoided, since they hinder the free development of the fermentation. The



source of fermentation, too, in the body is the abdomen, whereas in the bottle it is at the bottom. In other respects, however, the changes in form are brought about in exactly the same way in both cases.

The foreign matter deposited in the body undergoes a change, it ferments, and the fermenting mass spreads itself over the whole body. The fermentation also produces warmth and excites the entire system; we call such condition "fever". If fermentation goes on mainly in the inner parts, the heat also is chiefly internal, whereas the outer parts are chilly. This state is more dangerous than the feverish one. Chilliness,

as we know, always precedes fever, and it is an important point to change the chilly state into a feverish one, that is to draw the internal fever outside and bring the fermenting matter to the surface. If we are unsuccesful, the fever leads to serious illnes or even death, because the internal organs are then, so to say, burnt up, or if the fermentation ceases before this point is reached, are overladen with foreign matter.

It has been necessary for me to again call your atten tion to this matter and deal with it in detail before proceeding to speak of the diseases of children. We will now turn to the latter subject.

Under diseases of children are understood a number of feverish illnesses which most commonly occur in childhood. I shall show you how they *all have one common origin, so that the question is simply to understand fully the unity of these diseases.* To distinguish each by a special name is, therefore, for us a matter of no importance, it is even misleading. These diseases, too, can appear only when the body contains the necessary ferment. Most infants enter the world encumbered whit such, so that nearly everyone passes through one or more of these diseases of childhood. Why children are more subject to acute diseases than adults, I have already explained (page 26).

But prevention is possible. I will give you an example of how this is so. To prevent the possible destruction of towns and villages large stores of gunpowder, or other explosive materials, are never permitted to remain in them, We know very well that despite the utmost vigilance, the fatal spark might some time or other occur. Now why, I ask, are we not equally careful in regard to our bodies? Why do we continually supply them with foreign matter, which leads to violent eruptions? Why do we not rather take the trouble to get rid of the matter present? To be sure, the eruptions in the body are not always of such a

destructive character; yet they often lead to death, especially when the fermentation finds no exit.

Now let me trace in detail the course of the diseases of childhood; in doing so, I shall retain the usual names, because although they are no longer of any special value to us, they aptly designate the characteristic forms of disease.

Diseases of children occur, as we are aware, in very different forms and are attended by various degrees of danger, so that it does not seem easy to find the right remedy in every case. I shall now try to explain clearly to you, wherein the differences between these diseases consist and how they may be successfully treated. But first of all I must remind you that even with the most dissimilar forms of disease, there are always two leading symptoms: *heat* and *cold*. This, please, be sure to remember in following my explanation of the individual symptoms.

Measles. Let us imagine a child suffering from the measles. First of all we find it restless, sleepless with a hot, dry skin; in common parlance "the child is feverish". But nobody can yet say what kind of illness it is. Only the fact that other children have the measles, leads to the supposition that this is a like case. Nevertheless, we are in a position to proceed at once with the cure. The method of treatment follows quite clearly from our theory of fever.

Fever can only be allayed in the following way. We must endeavour to open the pores of the skin, so that the body perspires. In addition, we must draw away the heat by some cooling means. At the first outbreak of perspiration, even, the fever will decrease.

With this treatment, the measles will in most cases never really make their appearance. That is to say, the foreign matter will be conducted away and expelled in a form which cannot be given the name of any special disease, being discharged from the system through the

natural secretory organs, in the sweat, the urine, trough the bowels and in the breath. If we neglect to do this soon enough, however, the measles break out, appearing, as we know, in the form of crimson patches. The more profuse the eruption—or what amounts to the same thing, the more actively the fermenting morbid matter is ejected through the skin—the less is the child's life endangered. The less abundant and slighter the eruption, on the other hand, the greater is the danger from the heat developed in the internal organs, because then the fermenting masses burn them up. Inflammation of the lungs can then very easily occur, and the child dies, not *because* it has the measles, but because it has *not had them thoroughly.*

To effect a complete cure of the measles, we must thus try to open the natural outlets, the skin, kidneys and bowels, and cool down the system, until the internal heat completely disappears, whereby the digestion also will be regulated.

The cooling is affected by friction hip and sitz-baths having a derivative action (see pages 114—116). Perspiration can most simply and easily be produced, if the mother takes the child into her own bed at night, and thus helps it to perspire by the warmth of her own body. Otherwise, it often suffices to cover the child up well in a good large bed with feather beds or blankets. Care must be taken to let in fresh air by night and day by keeping the window open. If we do not succeed in this way, a steam-bath must be employed. This can be given most conveniently by means of the *folding steam chamber bath, which I have designed.* But where necessary, the bath can be arranged in a different manner (see pages 104—105). After every steam-bath the patient must be cooled down by being given a friction hip-bath.

When we succeed in making the child perspire, his condition will be materially improved. Should the fever

return, the cooling process, that is the friction hip or sitz-bath, must be repeated and the child then put to bed, in order that perspiration may be induced. This process of cooling and then again warming, must be repeated as often as fever reappears.

When there is an especially strong pressure to the head, the eyes or any definite part of the body, we have first of all to seek to remove such pressure by the application of a merely local steam-bath to the organ encumbered. As soon as the skin begins to perspire, the part will be immediately relieved, and the danger that any organ may be destroyed by the gathering ferments, is past. After every such partial steam-bath, a friction sitz or hip bath should be given to cool and soothe the system.

Now, if you consider all that I have first said about fever and measles, you will perceive that this disease is simply caused by a considerable amount of foreign matter lying latent in the system, which through some cause or other ferments. Fever is thus caused and the form of disease called the measles is produced. You see, therefore, that measles originate in just the same way as any other fever, and I shall show you further on, how all other forms of disease of which I propose to speak can be traced back to the same cause. (See also copies of original letters, Reports of Cures, Part IV.)

Scarlet Fever. A child ill of scarlet fever shows essentially the same symptoms as one having the measles; but the fever is usually far more violent, so that the parents' anxiety is increased, and with reason.

In scarlet fever spots also appear on the skin, and from their scarlet colour the disease receives its name. The spots themselves are at first small, but gradually run together thus increasing in size. The eruption is not, however, so general as in measles; it often extends over only a portion of the body, appearing chiefly on the head, chest and ab-

domen, whereas the feet remain more or less free. The latter are often cold, while the rest of the body is in a state of violent fever. The head and heart are most severely affected in scarlet fever, and it often happens that children suffering from this illness complain of pains in the ears and eyes. You will now find it easy to understand these symptoms. The condition already explained has set in; the morbid matter in a state of fermentation has forced its way from the abdomen in an upward direction only, towards the neck and head; and only the morbid matter already accumulated in the upper part of the body has passed into active fermentation. The smaller that portion of the skin which cooperates in expelling the morbid matter, by admitting an eruption to break out, the greater the danger.

But the main question still is: What can we do to afford rapid and effectual aid? In the first place we must take care to divert the danger of permanent injury to the eyes and ears. This we can accomplish by opening the pores of the skin by thoroughly steaming the head. (The manner of taking whole and partial steam-baths is described on pages 100—106.) As soon as the head has become thoroughly moist, the pores are opened, the pain ceases and the first danger is over. But it is often the case that such steam-baths for the head must be repeated several times, as the pain frequently returns after a short period. Indeed, it will recur regularly at short intervals, if we do not take care that the fermenting matter is expelled in another way. This is likewise accomplished by taking a cooling friction bath for the abdomen, in which manner the matter is expelled through the bowels and kidneys and also through the skin. The digestion has undoubtedly been out of order from the commencement of the fever; nor could it have been in order before, whether the parents noticed the fact or not. The fever deprives the digestive organs of their

mucous secretions; they become dry, can no longer perform their work, and constipation is the necessary result. The cooling and accompanying friction, mentioned above, have an excellent influence on the digestion; before long the bowels will be loosened, which is always a sign that the scarlet fever will take a favourable course. But in the case of scarlet fever patients, considerable time and an energetic employment of the remedies stated, are nearly always necessary before success is attained. This is another proof that more morbid matter is present than in measles.

You see that scarlet fever, likewise, is produced only by the fermentation of foreign matter in the system causing fever. Only here, there is much more fermented matter, the fever therefore being more violent and the fermentation spreading further upwards. The cause of this disease is thus seen to be that common to all fevers. I will illustrate the treatment of scarlet fever by an example from my practice.

The daughter and son of a Leipsic manufacturer, aged seven and two years respectively. were taken ill with scarlet fever and the family physician characterized the case as a very serious one, the cure of which might require six or eight weeks. Mr. W., who had already purchased one of my steam bathing apparatuses, for use in his own case, now consulted me about his children, the cure the family docter proposed effecting by physic, striking him as being rather a tedious one. After examining the children, I could give the father the comforting assurance, that with my treatment the entire illness would be over in about one week. The treatment was no other than that which I have already described: the children were given a daily steam-bath followed by a friction hip-bath at 70° to 72° Fahr. Whenever the violent fever reappeared, a hip-bath was given, this having at first to be done every two hours. It is evident that in this case special attention had to be paid to the

diet, as it is certain that spiced and stimulating meat-dishes etc. aggravate the fever and make it harder to cure. The children were therefore kept on a strict diet of bread, gruel made from wholemeal, and raw or stewed fruit, and only allowed to eat when really hungry. As I had foretold, to the delight of their parents, the children were well again within a week and the family doctor, who had at first asserted that such a rapid cure would certainly bring on disease of the kidneys, was obliged afterwards to admit that the children were perfectly cured.

Diphtheria. The word diphtheria is an alarming one for every parent, for the great danger attendant upon this dread illness is well known. The outward symptoms are somewhat different from those of the above diseases, but fever is also an essential characteristic. At times, it is true, the fever is apparently quite mild, especially in the case of children, who lie listlessly on the sick-bed and complain only of difficult in breathing. As a matter of fact, it is just such children who are generally the most seriously ill. In these cases the fever rages all the more internally, the skin is almost inactive, the bowels and kidneys are sluggish; nevertheless the fermenting masses press outward, space inside being wanting. Such cases are the most dangerous. If the system succeeds in expelling the morbid matter through the skin, as in measles and scarlet fever, all danger is over at once, but there is great danger where fever is chiefly internal. If we do not succeed in drawing this internal heat to the surface, there is little hope of a cure. There is then but one outlet for the body, the throat, to which the fermenting mass accordingly rushes with all its force, so that there is often immediate danger of death from suffocation.

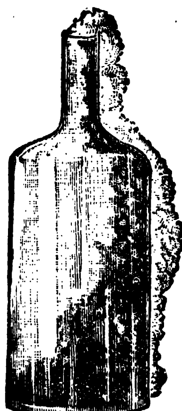
Where this danger is imminent, the first thing to be done is again to apply local remedies and to free the throat, even if only for a few moments. In diphtheria this

is done most speedily and effectually by steam, which lessens the pain and effects the expulsion of the collected matter. True, we have not gained much so far, but the momentary relief gives us time to cleanse the principal source of morbid matter, which is again to be sought in the abdominal organs. It is astonishing how quickly the condition of the throat is changed by my soothing baths. The friction sitz-baths, in particular, have a most remarkable effect, so that the abnormal growths sometimes disappear after only a few baths. But another change has taken place in the throat by reason of the pressure; it is swollen and inflamed, and this swelling and inflammation is far more dangerous than the fungoid excrescences. Before the actual outbreak of diphtheria, the patient complains, as a rule, of pains in the joints, for instance in the knees or shoulders. One can endure even a violent inflammation in these parts for a considerable length of time, but not an inflammation of the throat; against the latter, therefore, the most energetic steps possible must be taken. It would be a great mistake after the removal of the fungoid growth, to cease with the treatment of the abdomen. The cure must be carried on persistently, until there is easy motion of the bowels and regular digestion. Not till then can the patient be declared out of danger. As explained before, however, the skin is also one of the most important secretory organs; its peculiar function being to expel the morbid matter which has accumulated near the surface.

Imagine, again, the bottle with elastic sides. As long as it is closed, the fermenting matter cannot escape and expansion and tension follow. But on puncturing the sides with a needle, thus forming minute holes like the pores of the skin, the fermenting masses instantly escape through them, and the bottle regains its original form. It is just the same with the skin. Perspiration is nothing but foreign matter forced out from the interior by the process of

fermentation. Digestion is a process of fermentation, and the skin must therefore operate perfectly, if the body is not to become diseased. The skin of all healthy persons is consequently moist and warm; a dry, cold skin is a sure sign of disease.

In the case of diphtheria patients, the skin is almost wholly inactive and needs powerful stimulation. Even in this illness a healthy mother need not be afraid to take the



child into her bed; it may be the means of saving the child. Particularly in cases where there is no regular evacuation of the bowels, the system seeks to employ the skin especially as a secretory organ, this being, indeed, its function always. Had the mother, directly the skin began to grow dry, by her own bodily warmth induced the child's pores to open, and at the same time seen to proper action of the bowels and kidneys, the diphtheria would probably never have broken out at all.

Only when it is impossible to start the perspiration in any other way, should artificial aids be employed, and the children be given steam-baths.

You have now learned that the nature of diphtheria is exactly the same as that of the before mentioned forms of disease, the difference being only in the external symptoms. Only the most superficial can be deceived into believing that these various forms of disease have different causes. The report of a cure which occurred in my practice will render the matter plainer.

I was called to a Mrs. S., whose son, aged nine, was somewhat seriously ill of diphtheria. The boy was first given a steam-bath. A steam bathing apparatus, such as I construct, not being at hand, one had to be quickly improvised. We therefore placed the boy on a cane-seated chair and set underneath this a pot containing a gallon of boiling water. His feet were placed over a pail half filled with boiling water and covered with two strips of wood. The whole body had been previously carefully wrapped up in a blanket, so that no steam could escape. After a profuse perspiration had broken out, the patient was transferred to a friction hip-bath at 72° Fahr., in which the abdomen was bathed until the heat disappeared from the head. The great difficulty experienced in breathing at the commencement, gradually disappeared. It was necessary, however, to give a friction sitz-bath for half an hour every three hours and then also through the night, so that the fever should not increase. Naturally, as long as the child was in bed, the window had to be kept open a little day and night, in order always to have fresh air. By means of the repeated baths, we succeeded each time in at once allaying the fever, so that already on the first day of the application of the treatment, all danger was past. The cure being continued in this way, in about five days the boy was fully restored to health. Thus is the dreaded diphtheria cured, whilst short-sighted medical learning is still seeking a remedy.

Small-pox. Small-poc occurs oftener than is generally supposed. It is true the official statistics do not show this.

For any father who has some little acquaintance with the natural method of cure, is in no great hurry to report the case to the police as prescribed. He would only be subjecting himself and his family to the most unpleasant restrictions and annoyances, without any benefit. With proper treatment, small-pox is, as a rule, an almost harmless process, as we shall see. The diseases characterized by pocks occur in very various forms, such as *water-pox, chicken-pox, small-pox*. Formerly all eruptive diseases were designated pox. Small-pox is undoubtedly the most dangerous, for here the fever is most violent and with wrong treatment death may very quickly result. Just for this reason it is so greatly dreaded. Those diseases in which with wrong treatment death *quickly* ensues, are always supposed to be more dangerous than those, the end of which is preceded by a long illness. As a fact, however, even where recovery is possible at all, the latter are far more difficult to cure, notwithstanding proper treatment, requiring a much longer time for their eradication. Small-pox has become so dangerous simply because its treatment has not been understood, recourse being consequently had to vaccination. With correct treatment the latter would never have been thought of.

Small-pox may easily be recognized when thoroughly developed, but in its early stages it exactly resembles the other children's diseases, as nothing but high fever is observable. Gradually, scarlet spots of the size of a small pea appear, like those in the measles. They continue to rise until they resemble a currant, with one half in the body and the other projecting. In the middle a black dot is formed. These pocks may spread over the whole body, or be confined to isolated spots. Their cause is the unequal accumulation and distribution of foreign matter in the system, by which the progress and course of the fermentation is determined. The patient is worst off in those cases in which the eruption appears on the face, as it may

then leave the familiar pock-marks behind, if the correct treatment is not applied.

It is no mere chance that in one case the eruption appears especially on one part of the body and in another somewhere else; or that the head is peculiary liable to be affected, so that many patients show few pock-marks on the body, while the entire face is disfigured. Again call to mind the instance (mentioned on page 24), of the bottle with the elastic cap. On that side of the body where the foreign matter has gathered most abundantly, most fermentation takes place and here most pocks will be formed. Now, if other parts of the body of limited extent are encumbered more than the rest with foreign matter, more pocks will be formed there than elsewhere. Thus, it may happen, that a person may have his face pitted all over from ear to ear, whilst on other parts of the body there are marks but here and there. The head is, so to speak, a terminus of the body. When the fermenting masses are in motion, they always find a limit here. But as we saw in the bottle over which we drew the rubber cap, the fermenting matter always presses upwards, and if in the head it meets with a hindrance to free fermentation, it acts all the more vigorously here.

As soon as the small-pox rash is fully developed, vital danger is over in most cases; for usually only those patients die whose system is incapable of expelling the fermenting masses. It often even happens that the eruption breaks out suddenly just after death; and here too, one might well say that the patients died, not because they got the small-pox, but because they did not get it. The patients always die in a high state of fever.

There can be no doubt that this illness also must be accompanied by violent fever; and it is the fact we find small-pox patients, especially before the rash breaks out, in a very high fever. In the heated state of the body, the

pustules cause intense itching and burning, inducing the patient to scratch himself. Thus the pustules are torn out before they are ripe, and then the disfiguring pock-marks remain. This was also observed in former times, when the poor patient's hands were often bound to prevent his scratching himself. A widely read German encyclopædia still advises this procedure. What torture for the unhappy patients! But we have a better means of healing small-pox, without leaving behind those ugly scars, and one which removes all fear of this otherwise so much dreaded disease. We prevent the itching and scratching by the same simple remedy which we apply in the fevers already spoken of: we open the pores, so that the body perspires, and cool the abdomen, where the source of fermentation is. In the case of wine or beer, everyone knows that fermentation goes on more slowly the lower the temperature. The fermenting matter in the system obeys the same natural law. Increased warmth favours all fermentation; cooling hinders, retards and stops it.

This is a disease requiring the utmost care and attention, the system being most violently excited. But my mode of treatment robs the disease of its terrors, and one may be sure, that with extremely few exceptions, recovery will be thorough and speedy. The exceptions are found where the system is so overloaded with foreign matter, that in spite of the action of the skin, it cannot be expelled fast enough; or it may be, the body is too weak to expel it. As a rule, however, this will be the case only when the treatment is begun too late. Therefore I cannot often enough repeat the warning, that the fever should be fought from the very moment it commences; we must never wait to see what outward form the disease may assume.

You see that for the dreaded small-pox, we use with success exactly the same remedy as for the other diseases mentioned. But this can be possible only on the supposition that this disease has the same cause as the foregoing: the

encumbrance of the system with foreign matter; and this as we have seen it the case. Now-a-days when measles and scarlet-fever are no longer classed, as formerly, with small-pox, and the latter, has in consequence apparently become rarer, it is impossible for us fully to picture to ourselves that period in which they came as a dread plague and terror. As we now know of the unity of all diseases, and how to cure them, we naturally no longer have the same fear of illness. Besides, by the aid of the Science of Facial Expression, we are in a position to recognize years in advance, where there is such a great encumbrance of the system with foreign matter, that some cleansing process of the body, such as small-pox, may occur. And here I will acquaint you with another case of small-pox which I once treated.

In the family of a mechanic, three of his five children, aged 7, 9 and 13 years, were taken ill with small-pox. The father, who had also hat it and therefore knew the disease, soon perceived what danger his children were in. At the same time, he was also aware of the indescribable annoyances and difficulties to which he and his family would be subjected, should the authorities get wind of the matter. He consequently applied my method of cure in all three cases with the greatest secrecy, using only steam and friction hip-baths. The children were already in a highly critical condition. The skin was covered with black pocks. To hide this from notice, he had smeared the children's faces and hands wits ashes, in order to escape the protective measures of modern hygiene at all hazards. After only four stam-bats and ten friction hip-baths at 71° Fahr., the fever was so far overcome, that all danger was over and the skin began to peel, An unstimulating diet and fresh air had likewise aided the cure. By continued steam and friction baths, the children recovered so far in a few days, that they could get up and go out again, although

my method had to be applied a week longer in order to attain a complete cure. The most interesting fact about these three serious cases of small-pox is, that not one of the children has a single pock-mark to show. All five children of this family had been vaccinated repeatedly and nevertheless three were attacked by small-pox. From these cases we see how little danger attends small-pox when its treatment is understood, and what very doubtful protection vaccination affords. Anyone who knows the elaborate and unnatural precautions adopted by modern sanitary authorities, when it comes to their knowledge that small-pox has broken out, is the less able to understand them after vaccination has taken place, as the latter is supposed to afford complete proteetion. On the reprehensibleness of vaccination I hardly need make any special remarks. By vaccination foreign matter is directly introduced into the blood in an artificial manner. It is, indeed, almost a marvel, how human beings can so far stray from nature; but where knowledge is deficient, one is prone to believe in miracles. I have dealt more fully with vaccination in my little pamphlet on the "Rearing of Children".*

Whooping-cough. Although whooping-cough is not held to be so dangerous as diphtheria or small-pox, a good many children die of it and the others suffer dreadfully, to say the least of it, from the fits of coughing. Respecting this point, I should remark, that any cough must be regarded as a sign of serious illness, for man is neither a coughing, nor a spitting animal. A cough never arises until the pressure of the foreign matter tends upwards, and the natural outlet below is obstructed. Either the skin

* **"The Rearing of Children"**, by *Louis Kuhne.* A word of warning to parents and teachers. Published in German, Dutch, Danish and Hungarian. Price of the German edition 6 d. Louis Kuhne, 24 Flossplatz, Leipzic.

operates insufficiently, or the bowels and kidneys perform their functions imperfectly.

Children suffering from whooping-cough also show the familiar symptoms of fermentation, in other words, *they are feverish*. The matter seeks an outlet at the throat and head, though there is no secretory organ there. Now it is a question of primary importance, whether the patient perspires or not, when seized with a fit of coughing. If he does, he can get well without further remedies. But if no perspiration makes its appearance during the fits of coughing, the patient grows blue in the face, and the whooping-cough leads to certain death if no remedy be applied. At last, blood often streams from the eyes, nose and ears, for all the foreign matter seeks an outlet there. At this stage aid is usually no longer possible. If, however, the system receives timely assistance, it masters the disease even in most serious cases.

In this illness, too, the treatment is the same—it can be no other, as the nature of the disease is the same. The first and chief duty is to start perspiration immediately. It is also necessary to draw downwards to the secretory organs, the foreign matter which is pressing its way upwards in the body. The body has its definite organs of secretion, and only through these is it possible to expel the morbid matter in a natural manner. We completely attain our purpose by using the before mentioned baths. As soon as perspiration sets in, marked alleviation of the cough is apparent, and when the digestion improves, the coughing will altogether cease. The time required for the cure is quite indefinite. The cough may vanish for good and all in a few weeks, often even within a few days. It is an error to suppose that it must last two or three months.

I have now shown you that whooping-cough arises in the same way as the other diseases; that is, the morbid matter present in the system begins to ferment, causing

fever. After all these expositions, you will now feel convinced, that all acute fevers are simply an effort of the system to regain health, by expelling the foreign matter which does not belong there. We should therefore welcome every such acute fever. It is, in reality, a curative crisis; and we have seen of what great use to the body it may become under proper treatment, thoroughly cleansing the system of all foreign matter. It may be well for me to give another illustration of what I mean.

Fever in the system may be compared with a thunderstorm. Just as an acute fever is preceded for some time by chilliness and uneasiness, a thunderstorm makes its approach known by the heavy and sultry air, which none can help remarking. We say the air is heavy, we feel oppressed, and have a feeling that relief must come through a thunderstorm, because it is, so to speak, in the air. The heat and sultriness increase, until they reach that state which immediately precedes a thunderstorm. We feel the coming danger of the approaching storm; but the actual danger begins only as the storm breaks upon us, and is over as the latter passes off. All is now fresh and cool, nature, is reanimated, as it were. The thunderstorm is a process of fermentation of foreign matter in the air, whereby the latter endeavours to expel the invisible, floating vapour which in this case is foreign matter. The storm is therefore a process for cleansing the air. By the fermentation, the vapour also changes in appearance. At first invisible, it is now condensed by the change of temperature to clouds, and then falls as rain and hail.

It is similar in a fever case. Whenever fever breaks out the body is in danger, which is only over when the fever disappears and a refreshing reanimation takes place. You perceive that in these cases danger first arises through the thunderstorm and the fever, which afterwards, however, cause reanimation and recovery. Reanimation and recovery

are only to be attained by this dangerous process, the cause of which, in the one case, is the surcharging and heaviness of the air; in the other case, the surcharging of the system with morbid or foreign matter. This example will logically convince you of the uniformity of natural laws in all phenomena.

Concerning this illness also, I will tell you of a cure effected in my institute.

In the middle of July 1889, the four-year old son in a Leipsic family got the whooping-cough. At the beginning of August the sickness had reached its height. Then the baby daughter, aged two, also took ill. For ten days the illness became worse and worse, and during this time the child could take no nourishment. At last, the parents, who till then had been using the natural method of cure to the best of their knowledge, applied to me. I took over the case. The little girl had lost so much strenght that she could no longer stand. I ordered four friction sitz-baths daily, the children then to be put to bed, or given a sun-bath to bring out the perspiration; simple natural diet to be observed. The beautiful weather admitted of daily sun-baths being taken, which in conjunction with the friction sitz-baths worked wonders. After only a few weeks of energetic treatment, both children were out of danger, and in two months they had fully recovered. As regards the diet, it was curious to see how the little girl refused to touch oatmeal gruel, made without salt, sugar or butter, which would have done her most good, and would only take her customary unboiled milk and chocolate. From this one can see how important it is to habituate children to the simplest food from the first. Nor was it possible to keep her in bed with her mother, although this would have been the best way to make her perspire. Accustomed to her own little bed, she cried so much for it, that we were obliged to give in. Nevertheless the warmth of the human body

is the best means to secure perspiration and repose. One need feel no anxiety concerning the ill effects of the exhalations. The lower animals are our best model; to strengthen their weak and sickly young, they simply warm them with their own bodies. While children are well, accustom them to nestle on their mother's bosom; in sickness they will then find nothing strange in it. Of course the words "well" and "sick" are used here in their ordinary sense; for we know that a really healthy child cannot become sick at all if brought up rationally.

Scrofula. Scrofula is not a disease which excites heat, and is not therefore commonly classed with fevers, although in reality it should be. It is at least as serious as the others already mentioned—I might say, worse. It is one of those latent chronic diseases, which are generally inherited. The system is not sufficiently vigorous to bring about fever. As I observed in my second lecture, the temperate and colder regions of the earth are the home of this disease. The outward symptoms are much as follows: A large head, square face, inflamed eyes, bloated body, weak legs, deformed hands and feet, mental sluggishness. Of these signs, however, we generally meet with only one, or a few, in any given case, very seldom all at once. They are accompanied by cold hands and feet, and a chilly feeling all over. It is just this state of chilliness which makes the disease a serious one. It proves that the extremities of the body, by reason of being encumbered with foreign matter, have in great part lost their vigour and functional capacity and that in the interior there is therefore a wasting heat.

The case must be imagined thus: The extremities of the body, especially the hair-like ends of the blood-vessels, become obstructed by foreign matter, just as drain-pipes blocked up with mud. The blood can thus no longer circulate to the surface of the skin and thereby the feeling of chilliness arises.

The disease not being of an acute nature, causes no pain, so that it is only from the general character of the whole body that we perceive it is diseased. Hitherto, no one has been really able to say how the disease arises and in what it consists, and still less, how it is to be cured. Usually, help is expected from change of air, and the patient is sent, when his means admit of it, to another part of the country, or to a watering-place. But the result is never thorough, even although a change for the better sometimes takes place.

According to our experience, a child suffering from scrofula is permeated through and through with foreign matter, which it has inherited for the most part from its parents. This matter presses on to the extremities in particular, and under strong pressure the head gradually loses its round form and assumes a square shape.

Please remember in this connection, the comparison of the bottle with fermenting fluid, alluded to at the beginning of this lecture, over the mouth of which we put a rubber cap. Just as the latter is filled out and expanded by the fermenting masses, so does the body of a scrofulus patient swell out. By means of the Science of Facial Expression, however, we are able to recognize the very slightest tendency to this disease. Of course, it is necessary that one should know exactly the form of a normal body. Details on this point will be found in my handbook of the Science of Facial Expression.*

Distortions of the hands and feet arise from this same cause. The skin is more or less inactive, and cannot expel

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* **"The Science of Facial Expression"**, by *Louis Kuhne.* A handbook of a new system of examination to ascertain the state of the disease, based upon original researches and discoveries. Fully illustrated. Published in German, English, Spanish and Telugu. Price of the English edition, paper-cover 10 s., elegantly bound 11 s. Louis Kuhne, 24 Flossplatz, Leipsic.

the masses of matter accumulating beneath it. As remarked before, these obstruct the circulation, for which reason the skin in many cases is always cold.

In the internal organs, the warmth is consequently all the greater and excites inwardly a feeling of uneasiness, which we always find in a certain degree in the case of scrofulus patients. This is, in fact, a latent (chronic) state of fever. If it remains uncured, however, from the original illness new stages of disease develop, which may be still more dangerous and difficult to cure than scrofula. Most usually consumption follows upon scrofula, where treatment has been neglected, so that in a certain sense we may regard scrofula as only the preliminary stage of a more serious ailment.

But how shall we begin the cure? *We must proceed to transform the chill into a fever, the chronic condition into an acute one—to bring the internal fever to the outside.* And as we have to do with fever again, our treatment must consequently be the same as for other fevers; we must open the outlets, in order to gradually remove the mass of fermenting matter. We must, therefore, in the now familiar manner, excite the bowels, kidneys and skin. The skin will gradually grow warm, perhaps hot, but only until perspiration breaks out, when the normal condition will then be resumed. At first, the cure will only effect a temporary improvement; perseverance and energy alone lead to permanent results. How *long* it will take to effect a complete cure, it is hard to say. Days, or even weeks, will not suffice; it requires months or perhaps years, and sometimes does not succeed at all, when the body has no longer sufficient vitality.

In my second lecture, I showed you that with sick persons, the chill arises from the same cause as the excessive heat; and the same fact confronts you in scrofulus diseases. Two conditions of disease, apparently quite dis-

similar, thus arise from precisely the same source, and seem so different, only because they present themselves in different stages of development. In the caterpillar, or chrysallis, we recognize the same insect which we subsequently see as a butterfly, of which the first and second are merely preliminary states. It is the same with the different diseases. We should laugh at anyone who asserted that the caterpillar is quite another being than the butterfly, and *vice versâ*. And yet, it is to be regretted, a quite similar belief obtains to the present day as regards diseases, the unity of which has as yet been recognized by no one.

I will cite you a case of scrofula which was cured in my establishment. A boy of five had been so scrofulus since his second year, that at five years of age he was still unable to walk. He lay in his baby-carriage like a log. His father had had him treated by the leading physicians, but all in vain. The medicaments applied had, in fact brought about a decided change for the worse, so that the Professor in charge of the case declared that the child would never be able to walk. Medicines, plaster of Paris dressings, baths, electricity, everything had been tried, but quite fruitlessly, because the doctors consulted had no idea of the nature of scrofula. The child came under my treatment at the end of his fifth year. The digestion, which in the former treatment had never received due attention, was completely out of order. The body was distended, hard and lumpy. During the first week, the digestion improved decidedly under my treatment, so that a complete cure seemed probable. From week to week the renewal of the tissues went on more actively, and in six weeks the patient was able to stand without support. His body was greatly reduced in bulk and was not so hard, and many of the lumps which could easily be felt with the hand, dispersed and vanished. After half a year

the child's head, which had been much too large, approached nearer the normal size, and the boy might be regarded as cured, for he could run and leap like any other, and was happy and merry.

Shall I proceed to enumerate all the other illnesses? It will probably suffice to name a few: *mumps, nettle rash, spasms, diarrhœa, thrush, scald-head &c.* They may all be traced to the same cause, all are attended by more or less fever, and the cure is therefore to be effected on the same lines.

In all these forms of disease, we always observe one of two things: either increased warmth (heat), or increased chill (cold). Both these symptoms, as we have seen, are fever; whence it follows that they are both cured by the same treatment, a fact which I have proved in thousands of cases. All forms of disease are to be traced back to encumbrance of the system with foreign matter; or in other words: There is only one disease, appearing in the most various forms; and therefore—as regards essentials—only one method of treatment is necessary. All the various forms of disease are, as we have seen, only efforts of the body to recover health. They must not, therefore, be suppressed and rendered latent, as the orthodox medical school teaches, but the body must be assisted to effect these curative crises as quickly a possible, in the least dangerous manner. Only in this way can the body really recover. Disease if repressed or rendered latent, leads slowly but surely to severe and wholly incurable conditions of health. For the morbid matter in such a case, does not remain inactive in the body, but is subjected to continual changes an transformations.

One word now, concerning the diet in all cases of disease. This must be such that no new foreign matter is introduced into the system and the fermentation thus increased. As vigorous action is going on in the body,

it should be burdened with as little additional work in digesting as possible. The first point, therefore, is: *Give the patient but little nourishment, and never urge him to take food and drink when he does not call for such.**

And here I desire to add a few remarks concerning the **danger of contagion** by the sick.

No acute disease (fever) whatever is imaginable, which has not been preceded by a chronic stage, consisting in the encumbrance of the system with foreign matter. For this reason the chronic condition is the most dangerous. True, a transmission of this morbid condition takes place only from parents to children; but it occurs in every case where the parents are encumbered with morbid matter, and is therefore a sure way of such matter being propagated. When we see how children inherit the outward bodily form, the colour of the eyes, even the mental characteristics of their parents, it is easy to conceive that foreign matter, too, is transmitted, especially from the mother. The direct proof is found in the fact, that the same forms of disease usually show themselves in the children as in the parents.

Infection has hitherto only been supposed to take place in the case of acute diseases; but as I have shown, the transmission of foreign matter from parents to children is nothing else than a transmission of the disease, that is infection. The transference of this foreign matter, signifies the transference of the cause of the acute illness. As I have already stated, diseases of children are only to be explained by assuming the inherited encumbrance of morbid matter.

The question may be asked whether acute diseases can be transmitted, and it may be answered both with "yes" and "no". Perfectly healthy persons, *i. e.* persons whose bodies are free from foreign matter, cannot catch an illness

* Further particulars as to diet will be found in the chapter "What shall we eat? What shall we drink?" (pages 117—152).

by contagion, even were they to swallow or inhale any number of bacilli, bacteria or microbes. In the case of persons whose systems are encumbered with morbid matter, however, such products of fermentation can act as the exciting cause to fermentation, especially if the temperature favours this. If there is only little encumbrance, there is little danger of infection.

In the course of acute disease, foreign matter is continually fermenting and being expelled by the system. This is especially the case while the patient is recovering, *i. e.* when he is expelling the morbid matter by secretion. Hence the danger of infection is greatest from convalescents. How the infection itself is brought about, I will try to explain clearly by a familiar illustration.

If we set an easily fermenting substance in fermentation, *e. g.* yeast or leaven, and add it in this state to any other readily fermenting substance, as dough, milk, etc., everyone knows that fermentation will also quickly begin in the latter, if warm enough. Thus the yeast, itself a product of fermentation, produces again a state of fermentation when added to dough or mik. We say the bread rises, or the milk curdles. In acute diseases the process is similar. The fermenting foreign matter passes into the air from the breath or exudations of the sick person, or from the stool. Should it now enter into the body of some other individual encumbered with foreign matter, and be retained there, that is, not be immediately secreted,. it works upon the foreign matter already present, exactly like the yeast in the dough or leaven in the milk, *i. e.* as a ferment. Thus there arises in the second body, the same fermentation, and therefore the same disease, as in the first. This whole process of infection is, properly speaking, nothing but an inoculation of the fermenting morbid matter into the body of another person in natural dilution. Such matter can, however, only work as a ferment when it finds sufficient

foreign matter in a latent state in some other person. *Only those are in danger of infection* from an acute disease, *whose systems are already sufficiently encumbered with foreign matter;* or, as commonly expressed, who are predisposed to such disease. Up till now it has not been known wherein this predisposition consists. The difference in operation between this natural inoculation of morbid matter, and the unnatural process of inoculating it by vaccination with the lancet, lies in the difference in the inoculated matter and in its dilution. Homeopathy teaches that all substances are most effective in a state of dilution, for which reason the fermenting morbid matter is so highly efficacious in its natural dilution, when it finds a suitable soil. In allopathic doses the vaccine virus, like all allopathic remedies, has a paralyzing effect on vital power; that is, it deprives the body of the vigour which it needs to throw off the foreign matter in it by acute disease (curative crisis, fever). It increases, also, the quantity of the morbid matter and thus produces a far more chronic state, as clearly proved by the steady increase of all chronic diseases since the introduction of vaccination. All the other remedies against fever, such as quinine, antipyrin, antifibrin, morphia, etc., have the same effect. They simply paralyze the efforts of the system to regain health, and reduce, or even stop, the fermention of the foreign matter, but never eject it. Hence arise the diseases which were formerly rare, as cancer, intense nervousness, insanity (paralysis), syphilis, consumption, scrofula, etc. The system becomes more and more encumbered with foreign matter, but is without ability to summon up strength to throw it off by some acute curative crisis. The encumbrance reaches its highest limit in the above diseases, and full relief is then usually no longer possible. Precisely those medicaments which possess the property of most speedily suppressing fever, as *quinine, antifebrin, antipyrin, phenacetin, etc.,* have b come the favourite remedies of the physicians against fever.

It is our firm conviction that such are precisely the most dangerous means of injuring the health. Another observation may be made.

We have all had experience how medical science daily seeks for new remedies, to apply, because the old are no longer effectual. Recollect the blind enthusiasm for *tuberculin inoculations* before a single patient was even apparently cured; such a spectacle the world has surely never seen before. At first, each new medicament paralyses the vital powers; but in time, the system grows so insensible to it, as no longer to react. A new and more potent remedy is now required to paralyze the vitality further, until finally the fermentation of foreign matter cannot be longer prevented by any means at all, and destruction of life is the result. An illustration will render this plainer.

Anyone who is *learning to smoke* has to battle with his stomach until the latter grows insensible to the poisonous nicotine. At first, the stomach is vigorous enough to defend itself successfully against this poison, but very soon its strength is weakened, and complete insensibility to the poison is the consequence. We now require a stronger poison than before, to produce the first effect on the stomach.

Those who are beginning to smoke and cannot immediately bear it, usually tell us, to our astonishment, that their stomachs are still too weak, they must get used to it, they cannot stand smoking as yet. The very opposite is the case: as long as the stomach resists smoking, it proves that il still possesses enough vitality, that is, is strong enough to forcibly expel the poison. When it offers no resistance, the former natural activity is gone, it has become weaker.

The body, thus encumbered with this latent foreign matter, requires a far more powerful external exciting agent, if it is to be roused to expel the matter, because its vitality is diminished. I have already pointed out wherein

such excitant consists. It is generally a change in the weather which is the direct cause, for which reason we always have great epidemics after unusually cold winters.

I will here add a few illustrations. If you carry a bottle of beer into a dark, cold cellar, fermentation will not easily set in. But on exposing the bottle to sunshine and a warmer temperature, fermentation begins at once, even if the bottle is tightly closed. This fermentation is caused neither by bacilli, nor by microbes, but merely by light and warmth. At the same time, the outward appearance of the beer is changed; at first clear, it has grown turbid, and if bacilli are now contained in it, they are the product of fermentation.

We observe the same thing in the air. One day we have a glorious, clear summer day; the next, the sky is overcast. But every one knows that the watery vapour floating invisibly in the air is condensed to clouds by a change (in this case a fall) of temperature. We also perceive, here how each specific degree of cooling produces its own kind of precipitation, (dew, mist, rain, hail, snow); yet there is no difficulty in recognizing them all to be simple products of water.

In marshy tropical regions the atmosphere is constantly filled with fermenting matter from the swamp, so that a short stay suffices to bring on a fever (that is fermentation) in a person encumbered with foreign matter. The marshy ferments act upon the foreign matter in the system like yeast in dough, producing fermentation (fever). All stagnant water acts similarly, but not so violently. Only notice the difference between clear mountain lakes, the stony bottom of which admits of no fermentation, and other muddy land-locked pools.

Sometimes the latter are also fairly clear, but with every change in the weather, fermentation takes place in the water, starting from below and making the entire lake

turbid, so that one can often recognize what bottom the water rests on. Standing water on a muddy bottom is often set into a sort of fermentation by a change of weather, just like marshy water, and it then operates as a ferment on the other substances. This process of fermentation may be clearly seen by comparing the state in summer and winter. In winter, even standing marsh-water is comparatively clear, because the cold prevents all fermentation, but in hot weather it is nauseously foul and muddy.

The only question is, what may be the cause of an epidemic when direct contagion seems impossible, for we see the same disease appearing to-day in one place, to-morrow in another.

Without the presence of foreign matter in the body, epidemics are, as already stated, quite out of the question. On closer inspection, we find epidemics every year, though not always so wide-spread as the influenza at the beginning of 1890. But who is not aware that every year at certain times the measles, scarlet fever, diphtheria, whooping-cough, colds, influenza appear epidemically? It follows, in view of the in general, uniform mode of life of the masses, that their encumbrance with foreign matter whether regarded quantitatively or qualitatively, likewise displays a certain uniformity. Now if one and the same exciting influence affects this matter, *i. e.* should the weather exert a similar external excitement on the vital powers of the body, the latter will also make similar efforts (fever) to regain health by expelling the foreign matter. And where the encumbrance in a number of individuals is pretty uniform, the like cause will at the same time produce a like effect in many of them, thus creating an epidemic. But one should never forget that even in epidemics, individual cases of sickness are never quite similar, always differing somewhat, in their symptoms and course. When an epidemic, such as we saw

in the case of the influenza, appears here to-day and there to-morrow, the cause is simply the weather. In this respect such diseases resemble thunder-storms, which also at times appear "epidemically", to-day in one region, to morrow in another. When an epidemic once breaks out in a place, direct contagion does the rest, as before described, in spreading the disease, just as in the last influenza epidemic.

Wide spread epidemics have been rarer in recent years. But as observed above, the sole reason of this is, that the medical profession has learned so far to paralyze the vital powers of the people, that in all sweeping, epidemic curative crises, the system can only rally the requisite vitality when compelled under particular stress. The necessary consequence of this, however, is a far more serious and general, chronically (latent) diseased condition; and we doubt not that the time will come when this will be universally recognized.

Summing up the result of these remarks, we find: (1.) *That in the transmission of diseases from the chronic state (i. e. from parent to child), the foreign matter alone is the cause of the transmission.* Whoever is desirous of prevent ing such transmission, must, therefore, first of all take care to get rid of this matter. Such transmission is the worst propagator of disease, because it takes place in all cases; whereas infection through an acute disease, occurs only when there is predisposition.

The extent to which the system is encumbered with latent foreign matter can be ascertained by the Science of Facial Expression.

(2.) *In the case of infection by acute diseases, the latter pass from one person to another by the transmission of fermenting matter, usually through the medium of the air. But infection is impossible without the presence of foreign matter (predisposition) in the system of the other person,* as disease arises only from the fermentation of such matter. Pure air

is, therefore, a first condition in the sick-room. This is obtainable in no other way than by opening the windows, or using proper ventilating apparatus. All the perfumes and disinfectants so often employed, do not carry off the foreign matter, but simply help to pollute the air. At the same time they dull the sense of that guardian of our health, the nose, making it indifferent to even the most ill-smelling exudations of the patient; they operate exactly like the remedies mentioned above, not for the better but for the worse. All possible attempts may be made to destroy the ferments in the air by poison, but they will neyer succeed; and as a very little morbid matter suffices to set up fermentation in the system, disinfection is but a vain endeavour. The only proper remedy is one which cleanses the system and drives out the foreign matter, the source of predisposition. You already know it—the friction hip and sitz-baths and the steam bath. In the treatment of patients I have often been obliged to inhale their frequently disgusting exhalations. At the next friction sitz-bath which I took, just the same horrible odour was often given off by my own body, only it was less intense. Here we have a plain proof that the vital powers of the body were so much increased by the bath, that it could expel the virus of disease.

(3.) *This simple remedy also protects us from infection in all epidemics,* because the foreign matter (predisposition) is thereby removed from the system, and without it, no disease, and thus no epidemic, is possible.

I have thus shown that the transmission of disease and infection by it, are only possible when foreign matter is present in the system. Without this no disease, and without disease no infection. But any encumbrance of the body with foreign matter means nothing else than its inner defilement. He who knows how to keep his body clean inside and not merely outside, is safe from all infection. *It is only clean-*

liness that cures. One always imagines that different forms must conceal new and various causes, quite forgetting that nature very often exhibits one and the same thing under most varied forms. This we see in the case of caterpillar and butterfly, and of rain, snow, hail, dew, and mist.

If now, in the light of the above, we think of the preventive measures which the medical profession takes against contagion in the case of acute diseases, *e. g.* diphtheria, small-pox, cholera, one must really be almost moved to pity. We see whole houses carefully isolated from all communication, and everywhere in the dwellings the adour of carbolic acid and other useless disinfectants, which are supposed to destroy the contagious matter. One loses all patience when one reads again and again in the newspapers, of ships being kept without purpose for weeks, or even months in quarantine, in order to prevent contagion. Whoever has been so long engaged as I in the practical treatment of the sick, must, if he is not blind, get quite a different picture of the dangers of infection. I have seen children suffering from diphtheria, scarlet fever, measles, small-pox, sleeping in the same bed with their brothers or sisters, the family circumstances not admitting of other arrangements. Yet there was no contagion, for there was no predisposition on the part of the other children, *i. e.* they were not encumbered with morbid matter, which would form a natritive medium for the development of the disease. On the other hand, I have seen in some families all the children one after the other take the illness, scarlet fever, diphtheria, and small-pox, notwithstanding that all the directions of the physicians regarding disinfectants had been most scrupulously observed. In such cases, too, I have often informed the parents beforehand, that although only one child was attacked at the moment, the others would probably catch the illness also, because the Science

of Facial Expression showed me that there was predisposition to such. We see, then, how utterly absurd the preventive measures of the medical profession against contagious diseases are. We only have to turn to nature to see that this is the fact. In the forest we find the stump of some old tree, eaten up by worms and insects and overgrown with fuugi, whilst close beside it a young tree is sprouting up proudly, quite unconcerned, notwithstanding the dangerous foes around it. Were the young tree already infested by the germs of disease and filled with morbid sap, it would certainly not be proof against the fungi, insects, and worms. As it is, however, it shoots up with vigour; no worm or insect attacks it, no fungus can take root upon it, because for all, the appropriate nutritive medium is wanting.

May the importance of what I have said about infection be grasped by the masses of the people, so that the superstitious and false teachings of medical orthodoxy may be broken down! The public would then no longer so easily lose its head at the outbreak of an epidemic, but cool and collected set about the cure.

Rheumatism and Gout, Sciatica, Distortions, Crippling, Cold Hands and Feet, Hot Head: their Cause and Cure.

(A Lecture.)

Ladies and Gentlemen:

RHEUMATISM is a disease so widely disseminated, that you will no doubt be interested in hearing of the progress I have made in its treatment. In earlier times only elderly persons, more especially males, were troubled with rheumatism; but now-a-days it spares neither age nor sex, children even being especially liable to it. It may be confidently asserted, that despite the innumerable remedies employed against it, the disease has increased. Any part of the body may be affected. Who has not at one time or another experienced those agonizing rheumatic pains in legs, arms, shoulders, head or teeth. The fmost eared of all is probably that affecting the joints, or articular rheumatism.

People take little trouble to discover the cause of this complaint. "I have caught cold", that is always the story. Indeed, it is astonishing that the inventive spirit of our century has not tried to concoct some kind of weather without the unpleasant property of making young and old catch cold. But there is something more to be said about this catching a cold. Suppose that in cold, wet weather a regiment of soldiers is sent out into the open country, they

being picked men of approximately the same age, and, in the popular opinion, of nearly equal health. On their return the effects will show in various ways. Some will complain of coughs and cold in the head, others perhaps of toothache, or some other rheumatic pain; but most of them will be in the best of health, or will even have got rid of some minor disposition, such as headache. Now all this is set down to the weather; and those who assert this would seem to be in the right, for the changes in the systems of the men were, as they temselves felt, occasioned by being always in the open air. The first cause however is sought in the wrong place. There is hardly a more false conclusion in the world than that drawn here: that the same weather can at the same tike make one person ill and another well.

And it is a fact that for centuries sick humanity has, indeed, been but little aided by a theory of disease unable to solve such contradictions; on the contrary rheumatic complaints, in particular, have spread very considerably.

Rheumatism frequently affects only one side of the body, or only one leg, one arm, or one shoulder. This circumstance alone, in my opinion, sufficiently proves that the weather is not properly to blame; for it is not at all probable that the rheumatism would then have seized on only one leg or one arm, when both legs and both arms were exposed to the same influences. It likewise often happens that a person sits with his right arm towards a draughty window, but gets rheumatism in his left arm, though the latter was further away and better protected from the draught than the other. If, therefore, we would resist rheumatism with better success than hitherto, we must search more carefully after its cause.

Let us first observe what this disease has in common with other disorders.

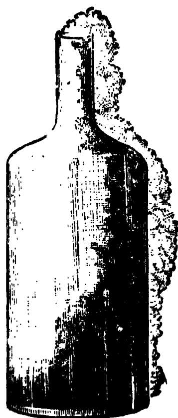
If we carefully examine a rheumatic patient we shall find that he also has fever, and that the painful parts are

inflamed and swollen, the digestion also being out of order. We find further that inflammation, especially in articular rheumatism, always appears in certain places. The symptoms named at once bring us a step nearer to the cause; for the present we must keep to the three symptoms: fever, inflammation and indigestion, and seek to discover what occasioned them. I have remarked that in rheumatism of the joints the pains always appear in definite parts. Strangely enough in my extended experience it has not once occured, that in articular rheumatism the principal pain was experienced in any other spot than *below* the joint, *e. g.* never above the knee, but always below it. That cannot be accidental, but must have a reason.

As already explained, the spreading of foreign matter in the body often takes place without occasioning fever to expel the matter from the system. The body then generally becomes encumbered to the fullest possible extent. With adults this is, in fact, generally the case, at all events in the temperate and frigid zones. If now a sudden fall in the temperature takes place, the matter will begin to retreat to its source. As we know, all bodies are expanded by heat and contracted by cold. This universal natural law also holds true in the human body. We see the expansion clearly in a case of fever, and, on the contrary, the contraction of the limbs within the shoes or gloves with cold. This contraction of the limbs exerts a pressure on the foreign matter accumulated within them, setting it in motion and causing it to retreat towards its source, the abdomen. At the joints the foreign matter accumulates, the course being obstructed by the continual movement of the joints. By reason of the pressure against the obstruction, inflammation is produced, causing violent pain; and as the matter is on its way back, the inflammation and pain always appear *below* the joints, that is, below the knee, the shoulder joint, etc.

If we again reflect upon the illustration of the soldiers, the conviction will grow upon us, that the real cause of illness must lie in the *body* itself, and that all the weather does is to occasion a reaction of the system, *i. e.* a transformation of the chronic, morbid condition, into an acute, feverish one. The symptoms of disease, therefore, appear only in those parts of the body in which a certain quantity of foreign matter is present.

To us, it is quite clear how *articular rheumatism* is caused. If we undertake the treatment of a rheumatic



patient, an exclusively local treatment of the parts affected is, of course, absurd. To relieve the pain, to render the matter fluid, and to open up channels for it, a local steam-bath may be given; but for a cure, the foreign matter must all be gradually drawn to the natural organs of secretion, and there expelled.

This, of course, is true not only of articular rheumatism, but of rheumatism in general. Whenever it appears: in the shoulders, back, side, neck or joints, it arises from friction; there must be some obstruction or resistance to the foreign matter. Now in the body, the fermenting matter does meet

with resistance, since the fermentation cannot, as in the bottle, proceed unhindered. Friction results everywhere, on account of the obstruction offered by organs such as kidneys, stomach, heart, lungs and joints. If there is considerable movement, pain is caused. But it is evident that as the foreign matter comes in contact with, accumulates and settles on the organs, the latter suffer an alteration and become diseased.

All pain, all rheumatism (the specific term is of no consequence) every twinge, burning sensation, every pressure, arises only from friction, and friction comes only from motion.

That is what I would say to you first of all, about the cause of rheumatism.

In proof of this theory, I will now proceed to describe a few of the many cases which so frequently occur in my extensive practice, and in this way explain to you the method of cure.

At the beginning of this year I was called to a woman who, as her husband told me, was suffering greatly from rheumatism, particularly in the right leg, also further up, in the joint, in the back and neck. „What treatment do you intend employing, Mr. Kuhne?" was the question she asked me. Previous treatment, extending over several weeks, had met with no success. To such queries I am accustomed. I explained, in the first place, in what manner the pains were brought about: "According to my experience", I replied, "it would be purposeless for me to undertake any treatment of the legs, neck, back or thigs (wrapping them up in wadding and the like). All the pains of which you complain are symptoms of internal fever. We must not therefore use warmth, but must go to the root of the disorder and diminish the great heat. You will soon come to see the correctness of this method." As the woman was quite helpless, the bath-tub was brought close up to the

bed. The united efforts of three persons were required to get the patient, who screamed aloud at every movement, into the water. I instructed a sick-nurse to give the helpless patient a friction sitz-bath. I think it was within scarcely 15 minutes when the patient, who at first constantly moaned and groaned, became quiet. "Well", I said, "you have grown very quiet all at once", to which she replied, "yes, the pains have subsided." From this you see that the treatment was correct. The pains in the back, thighs and neck arose in the manner I have explained, and could be relieved only by such treatment. In a few days the woman was able to get out of bed unaided and to take the baths by herself, and in a few weeks she could again go about her work.

Here is another case. An elderly man, who for months had been treated unsuccessfully for acute articular rheumatism, had me called in, and asked if I could still help him. I explained, after making a diagnosis according to the Science of Facial Expression, that it was not too late to aid him. It was the left leg which pained him. Treatment was applied, similar to that in the previous case, and two baths enabled the man to go away on foot, though he had come in a cab. Now, why did only the left leg happen to be affected and not the right?

This I will explain by the following examples.

In my lecture on fever, I have already explained the one-sided accumulation of foreign matter, by showing like processes in a bottle. It is probably evident to you, without further explanation, that a one-sided illness must come from a one-sided accumulation of foreign matter. Now you will perhaps ask, whence this latter arises, since it would seem probable that the body would distribute the matter as far as possible, in order to make more room. Well, as a matter of fact the accumulations are, as a rule, not entirely, one-sided; but they almost always *begin* on

one side, and remain confined to that side until it becomes overloaded, whereby the matter is forced over more or less to the other side. But the first side has for a long time the larger deposit. The cause of this one-sided accumulation is a purely mechanical one, resulting merely from the fact that matter obeys the law of gravitation. A few simple experiments will make this plain. Suppose we take two glass bottles, fill them, to begin with, with pure water, close them, and leave them so over night. On examining them next morning we find no alteration, nor can we see on which side the bottles have lain. But if we shake up a little mud with the water in each bottle for the following night, and leave the bottles again in the same position, we perceive a difference next morning. On carefully taking up the bottles, we immediately see in what position they have lain over night; for, on the side upon which they have lain, mud will be deposited, above which the water will be quite clear. If we add to the mud, for the third night, any quick ferment, the appearance next morning will at first be the same; but on opening the bottles and conveying them into a warm place, fermentation begins in the interior, in the muddy sediment. The fermenting mass rises and escapes on that side upon which the bottle has lain. (See Figs. A and B.) Thus it is not an accident, that the mass works out of the bottle on one particular side; for it will invariably issue from that side upon which it has collected in the bottle.

The fermentation would have begun in the mud, even without a special ferment, only it would then have depended upon the influence of the weather, and we might have had to wait a long time for it. You will have an illustration still more similar to the human body, if you imagine the fermenting masses in a carefully closed bottle with elastic sides. The fermenting masses need room, and this they obtain, as the bottle is closed, by stretching its sides.

These simple experiments illustrate the processes going on in the body; the matter is deposited on the lower side, and which this is, depends chiefly upon the position which we assume when sleeping.

On looking at a perfectly healthy person one cannot see upon which side he is in the habit of sleeping. To him. also, it will be quite the same whether he sleeps on the right or left side, for he can lie as comfortably on one

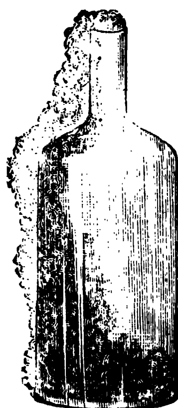


Fig. A.

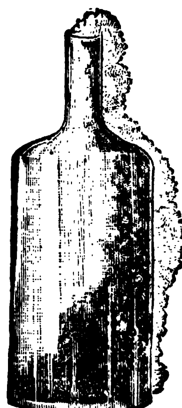


Fig. B.

as the other. When, however, the body is encumbered with morbid matter, it is very easy. according to my new method of diagnosis, to remark at once the greater or less deposit of matter on one side than on the other. When the accumulation of matter has become excessive, its distribution is more regular, while the condition has grown to be so uncomfortable, that the person affected can no longer lie quietly on either side, but tosses about uneasily.

When one side is especially encumbered, this side will always be affected more easily, or more intensely than the

other. Thus you see how it is possible for a person to sit with his right arm, for instance, next a draughty window, and nevertheless get the rheumatism in his left arm.

The one-sided deposit, it is true, does not take place so quickly in the human body as in a bottle. But children are often born with a one-sided encumbrance, owing either to the one-sided position in which the mother has been accustomed to sleep during her pregnancy, or to the position taken by the child within the womb.

You will now see plainly why in the case of the soldiers mentioned above, some of them had the toothache, etc. on one side only; and you will likewise perceive without difficulty, why my patient had the rheumatism only in his left leg: he had for years slept regularly on his left side, hence the one-sided encumbrance.

A short time after treating the last case, I was called to Magdeburg, to be consulted about what was regarded as a very exceptional case of rheumatism. I went accordingly and found that the case was quite of the ordinary kind, only the symptoms were very severe. The knee and ankle were extremely swollen and painful, and the man could not move his leg. The joints below the knee were highly inflamed, and the part above the knee was at the same time much swollen, so that the patient could not straighten out his leg. He told me that he had suffered much during his life, the disease had attacked him every year, and had grown worse every time. The man was encumbered with morbid matter from head to foot. New foreign matter was pressing on towards his knee, while the old sought to return. Induration would soon have set in, and then it would have been a case of gout. This was partly due to the fact that the disease had hitherto always been treated locally with warmth. The condition had changed, it is true, under this treatment, and apparent recovery had resulted, but in reality the disease had only been changed to a

chronic one; the matter was quiescent, but ready to be set in motion by every fresh fermentation.

The diseased parts were now first softened by a steam-bath, and the cold baths to draw off the morbid matter, very considerably prolonged.

This treatment met with the greatest success in a very few days.

I was consulted once by a woman who suffered greatly from **gout** in her hands and feet. She said that all remedies hitherto applied had been unavailing. I tried to explain to her, that her ailment was owing simply to imperfect digestion, and that relief was possible only when the latter was got into order and when the bowels and skin performed their functions properly. I advised her to take three friction sitz-baths daily, and to observe a suitable diet, so that no new foreign matter might enter into the system. Some weeks later the joints were no longer so cold as before, but quite hot; at a slight distance the heat could be distinctly felt. The cold baths had, therefore, not induced cold in the body, but warmth; their purpose is to remove the foreign matter and thus produce a better circulation of the blood, so inducing normal warmth. In a short time the heat disappeared from the joints and the body assumed the natural degree of warmth—the patient had recovered.

Another case of *gout*.

In a family where I had treated the children for some weeks with much success, I was summoned to a little chamber in which, I was told, their grandmother lived. She had often expressed a desire to have a word with me. "I see how successful you are with my grand-children", she said, "can you not help me, too? I am in great pain, and give a great deal of trouble to all around me; I have been lying in bed for three years." I answered briefly: "It is quite possible, if certain conditions are procured: that is to say,

better action of the bowels, kidneys and skin. Your sickness has arisen from defective secretions." "You may be right there, Mr. Kuhne; I have not perspired these many years and am in fact very glad of it; formerly I used to perspire much. It is the same thing with the bowels: once every four, five or six days; otherwise my digestion is good." One often hears people saying that their stomach and digestion are excellent, only that they suffer from constipation. It is sad proof how little people understand about a good digestion. "Yes, I replied to the patient, it goes into the body well enough, but does not come out regularly. And what becomes of substances that are introduced into the body? Gout is nothing more or less than a result of imperfect digestion." This seemed reasonable to the old lady, who was in her 70th year, and she requested me to begin the cure in a day or two. I sent my bath-woman to her and prescribed the manner in which the baths were to be taken. The patient had to take three baths daily, after which she was put to bed, in order to make her perspire if possible. She began perspiring sooner than we expected, and after each bath so freely that her night-dress had to be changed twice during the night. Within a few weeks she was so far restored that she could rise without pain and walk about her room.

This patient had the gout. The first cause was that her digestion was out of order, and one of the first effects of her imperfect digestion had been rheumatism. "As long as I had my shop, I always had a great deal of work to do, and did not pay much attention to my rheumatic pains", the patient explained to me one day, "after giving up business, however, I got the gout." In other words, gout came on because the rheumatism had not been attended to.

Sciatica, too, is nothing more than an inflammation of the hip-joint, which comes about in the same manner as rheumatism, and consequently is cured in the same way.

Let us hear what a former patient of mine writes in his gratitude:

"Herewith I send you my heartfelt thanks for the cure of my many indescribable sufferings.

"I was attacked in the autumn of 1885 by violent pains combined wiht stiffness in my left hip, then in the right one, and in the small of the back, developing into general stiffness and rigidity. The physician whom I consulted diagnosed the disease as sciatica. His course of treatment brought on in addition severe photophobia (dread of light), nystagmus (quivering of the eyelids), shooting pains across the face, heaviness in the head, dreadful twinges and aches in the left arm and hand, and complete general debility, so that I could neither draw off my shoes and stockings, nor even get into bed without assistance. My hair turned quite grey in a short time owing to the fearful pain.

"I was treated unsuccessfully by more than twelve celebrated professors and doctors of this town, and was also exhibited as a remarkable case to the students by some of the University lecturers. A young physician used me as a subject to pass his examination for the State medical diploma. I was often for months at a time, in the Municipal Hospital and the University Clinic. Finally one professor and a doctor of the Leipsic University Policlinic advised me, in January 1889, to consult Mr. Louis Kuhne, who just at that time was giving public lectures. I did so on January 23rd 1889.

"On January 24th I commenced the baths. At the very first bath considerable quantities of water were passed, the abdomen grew smaller, the head lighter, and for the first time for years, I was able to walk without the sticks, hitherto constantly used. On the same day, I presented myself to the professors of the University Policlinic at their request, to obtain their confirmation of the striking improvement in my condition.

"After conscientiously pursuing the method of cure prescribed by you for three weeks, I was enabled to report to you on February 13th 1889, at a public conference held by you, in the presence of some twenty or thirty students that I was in perfect health, at the same time giving ocular demonstration of my statement by all kinds of movements.

"Since then I have been quite well and able to work; I can carry a hundred-pound weight in each hand, whereas before I could not move, to say nothing of being able to work or carry weights. From the autumn of 1885 to January 23rd 1889, I had been treated by the leading physicians of Leipsic, my condition steadily growing more wretched and miserable. Between January 23rd and February 13th 1889 you restored me to health and ability to work, by your new method of treatment.

"Leipsic. Heinrich K."

Let us now consider the origin of **cold hands and feet** and a **hot head.** We all know that the head really ought to be cool, and the hands and feet warm, yet we very often meet with just the contrary state. Now let us see how these symptoms of disease arise. I said in one of my former lectures, that there is no disease without fever, and no fever without disease. Therefore, according to my assertions, this condition must also be a feverish one. That this is so in the case of a hot head, no one doubts. Cold feet and hands are less likely to be regarded as indications of fever. I maintain, however, that both—the hot head, and cold hands and feet—are caused in one and the same manner. How can that be? Every disease is occassioned by the presence of foreign matter in the system. By fever —fermentation—this matter is transported from the abdomen into the remotest parts of the body. Some is deposited in these remote points, that is, in the head, feet and hands. If the fermenting matter enters the feet and hands, it finds there but very slight resistance. The foreign matter first

accumulates in the toes, then in the feet, and thus spreads gradually upwards into the legs, obstructing the circulation and consequently lowering the warmth. It is the same with the hands. With many persons only the finger *tips* are cold at first; with others, only *one* foot; later on, in the course of years, they begin to complain also of the legs, which are cold up to the knee. Warm stockings are tried, but they, too, will not help for long. Even fur boots afford but temporary relief; there comes a time, when no warm clothing will suffice. The feet can no longer be warmed. This makes it very evident, that, as is well known, the clothing does not warm the body, but the body the clothing. And if, in the beginning, the warm clothing does protect one against the feeling of coldness, the reason is that there is still a certain amount of warmth in the limbs, which is communicated to the thicker clothes and retained by them. But this protection given by the warmer clothing does not long avail. Whenever the secretion of the skin and the regular circulation of the blood gradually decrease, the warmest clothing becomes useless.

With the head it is quite a different matter. The brain, with its abundant supply of blood, is far more capable of offering resistance to foreign matter pressing upon it than the hands or feet. Hence strong friction results, and as a consequence, warmth. Thus the riddle is solved. Exactly the same thing which makes the hands and feet cold, renders the head hot at first. But even the *heat* in the head terminates sooner or later. In my practice, I have met with patients enough in whom the head had already grown quite cold. Thus there is a limit here also. When the foreign matter presses on to the head in great abundance, the resistance here also ceases after a while, and the head likewise grows cold. A proof of the correctness of this supposition can be given only in the cures resulting from a treatment founded upon it. If a patient would be relieved

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from the chilliness in hands and feet and the burning feeling in the head, he must commence his treatment at the place from which the fermentation started *i. e.* the abdomen. The digestion must be regulated, and then the hands and feet will grow warm and the head cool. A cold head will at first grow warm again and then attain its normal coolness. And this has been observed in a thousand cases, fresh instances occurring daily in my practice. Here I will add, that sufferers from cold hands and feet are always especially liable to rheumatic attacks.

I now come to **Distortions.**

From my exposition you have seen, that all the forms of disease hitherto described to you, may be traced to one common cause. Still, you will possibly be surprised that I proceed directly from gout and rheumatism to alterations in the form of the body, such as high shoulders, curvature of the spine, twistings, distortions, etc. And nevertheless these latter have, as I shall show you, the same common origin as the diseases already described: namely the encumbrance of the system with foreign matter and the increased accumulation of such in the various parts of the body. These diseases frequently appear together. Should we enquire after the cause of such, you yourselves would answer: "The alterations can have been brought about only by *accumulation* of foreign matter. They are to a certain extent gout on a large scale." And your answer would be correct. But in what way it was deposited, and how it gradually took its course to a special spot, I shall now explain to you with the aid of a few illustrations. Experience shows that it takes a long time before foreign matter is capable of producing great excrescences and changes in the body; years even are required for this. Sometimes, too, the system gains time through an acute disease, expelling so much foreign matter, that the ex-

crescences and alterations temporarily disappear, so that years may pass after the first stages until the deformity is fully developed. Thus the same foreign matter which in one case produces small-pox, in another typhoid fever, in a third diphtheria, etc., is the cause also of these deformities and distortions, when the system no longer has the vital energy to get rid of the matter by means of an acute disease. The foreign matter generally accumulates in certain places, mostly in those in which it is least troublesome to the organism and as far as possible removed from parts where there is constant activity. The disease itself, therefore, when the deposits have collected in a place where no important organs lie, may cause but little discomfort. The external changes, however, gradually attract attention, and all possible explanations are sought. Usually the vocation must bear the blame as involving a one-sided employment, or some special habit, such as not sitting straigh up. Doubtless that is partially so; but such habits only aid in determining the way, and therefore merely exert an influence on the form of the alteration. With perfectly healthy persons, curvature can never be occasioned by sitting crookedly, as long as they rest when tired and give the body time to recover at intervals.

Thus I have often noticed that country people, who work all day in a stooping posture, exhibit a fine, straight figure when they happen to stand upright. Had these people not been healthy, their figures would assuredly have been influenced by foreign matter. In the beginning, most persons attempt to hide their growing deformity from the eyes of others by the aid of tailor and dressmaker, but it is impossible to do so for any length of time.

There is great variety in the kinds of deformity. It is occasioned by the occupation, habits, position during sleep, and in great part by natural disposition. There are scarcely two persons to be found whose forms are alike;

still certain normal forms can be distinguished, which I shall show you in the following illustrations.

Fig. A (page 87) presents an approximately normally formed man; it will be readily seen that the members are well proportioned. Nothing is too short or to long, nothing too thick and nothing too thin; all the limbs are symmetrical.

Fig. B gives a different view. You will instantly perceive the alterations on the left side: a prolongation of the buttock both above and below. The latter would be the first of the two to show itself, because the foreign matter starts from the abdomen, and the alteration therefore always begins in this region; it undoubtedly lasted years before the shoulder was raised. Had the relatives noticed the lower prolongation in time and recognized the danger, they assuredly would not have delayed commencing a suitable course of treatment. Of course, I cannot blame anyone in such a case, for the methods of cure up till now pursued, are not in the least capable of remedying such diseases, and for the most part do not even recognize them as diseases. The patient so deformed is called a cripple, and that is the end of the matter. But how this deformity has been brought about, from what causes it has arisen, has probably never been recognized before. My new method of cure, when confronted by such cases, is not so helpless as the earlier methods, and the course of the cures effected by this system has proved its correctness in the most different cases. The formulation of my theories has always followed my practice.

The foreign matter has accumulated in the body especially on the left side, the expansion being brought about here in just the same way as in the bottle with elastic sides, in which the fermenting mass collected only on the left side. The matter requires more room, and finding no outlet, it swells out the sides by continual

pressure. Now, if the fermenthing mass lies, as here, only on the left side, it is only this latter which will be unusually distended.

By means of my new system of diagnosis, the Science of Facial Expression, this disease might have been recognized

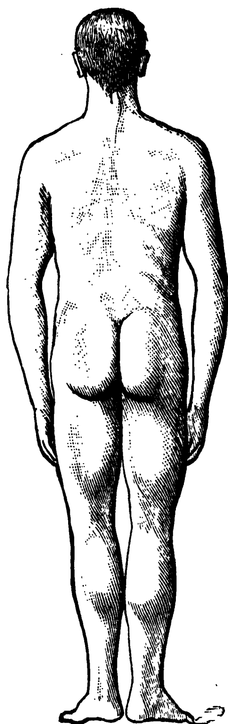


Fig. A.

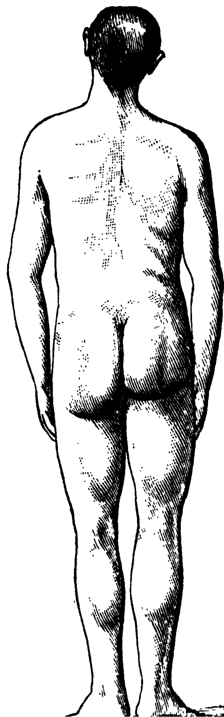


Fig. B.

with ease at its very beginning, and a proper course of treatment adopted for ridding the system of the cause of this encumbrance, viz. the foreign matter. For years before any prolongation whatever of the left side of the buttocks appeared, an increased encumbrance of the left side of the neck might have been discovered. And now that we have

learned the unity of all diseases, and know that this inequality is caused by the same foreign matter from which typhus, diphtheria, etc. arise in other cases, it is easy both to prevent and to cure such distortions.

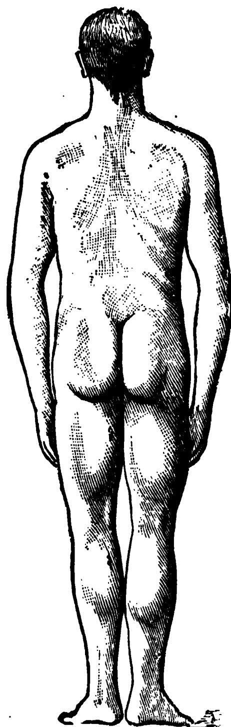


Fig. A.

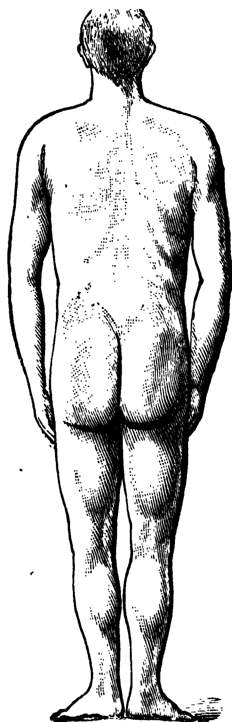


Fig. C.

Now, ladies and gentlemen, you have heard to-day, for the first time, how crookedness and deformity of the body come about. I shall now show you, by further illustrations, that all these forms spring from the same cause.

Fig. C (above) shows you a body in which the buttocks are lengthened on both sides. You may, perhaps, at

first have only a dim consciousness that the body exhibited here is wanting in true symmetry. But comparison with Fig. A shows immediately that in this case the whole trunk is too long. The lower part is particularly so, for which



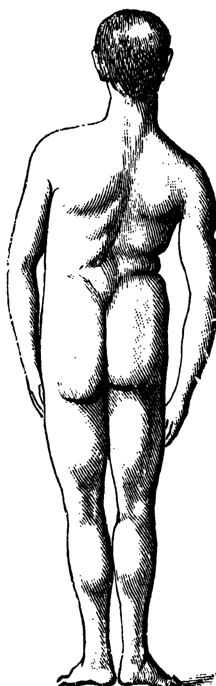


Fig. D. Fig. E.

reason the legs and the neck have become too short, the latter being in part hidden between the shoulders. In this case, not merely a one-sided encumbrance of the buttocks with foreign matter has taken place, but one equally distributed; in consequence, the entire buttocks are equally prolonged on both sides by the matter. In these cases it also happens that the matter presses up through the neck

into the head, then causing an abnormal form of the head in addition, as you may often observe. I again remind you of the example of the bottle, over which we drew an india-rubber cap. The alterations in the head are brought about in a way very similar to that in which those in the bottle are caused.

But you may also observe, often enough, just the contrary of these forms, that is, the legs and arms too long and the trunk in comparison far too short. The cause is again the same, only in this case, the foreign matter has at an early period penetrated to the extremities, and therefore the trunk has been for many years unable to keep pace with the distention of the limbs.

Hardly anyone will suppose that by means of our simple method we can restore full symmetry in all such cases. Certainly a consistent application of my cure for a series of years is usually needful, before the chronic state can be readjusted; and when the organism is too old, and the requisite vitality consequently lacking, it is impossible to effect a complete cure.

Fig. D (page 89) shows us a form unhappily very common at the present time; the matter deposited has brought about an elevation of the back, which at the same time prevents normal development of the chest, so that the form of the latter is conspicuously flattened. It looks almost as if what has been added to the back has been taken from the chest. The chest immediately expands when the back is freed of its burden. In this case, too, the buttocks have, of course, been encumbered for a long time previously, so that with this form we always find also that the abdomen is either too large or too hard. Sometimes the encumbrance commences in early childhood, or is even present before birth and thus it happens that we see children at the age of only four or five years with rounded back and flattened chest. At this age the evil can be most readily and quickly remedied,

for with our cure a youthful body often makes as much progress in a month, as an older one in a year. This is, of course, owing to the greater vital powers of youth. I have already told you, how one can succeed in discovering these deformities in their very beginning: it is possible only by the aid of my Science of Facial Expression.

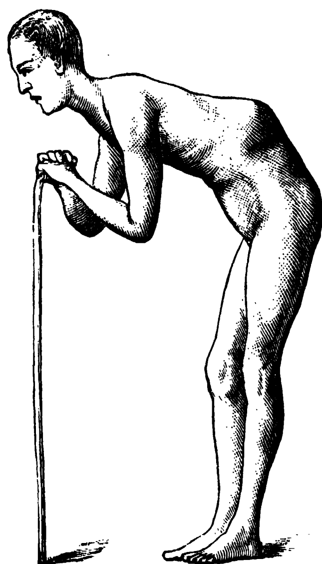


Fig. F.

The foreign matter may also at times take a very irregular course, passing over from one side to the other and back again. We see this exhibited in Fig. E (page 89). In this case, we perceive that the matter has been first chiefly deposited on the left side; but that in the middle its free passage has been checked by one of the organs in that region, so that it has been forced over to the right side, later again passing over to the oth er side. You perceive distinctly the prolong ation of the entire left side both upwards and downwar ds,

and in the middle the deflection to the right. A curvature of the spine has already taken place here. In the first place this is certainly due to an hereditary encumbrance. Should we try to employ shoulder-braces or other mechanical bandages for straightening the body, we should only be torturing the patient, without effecting a cure at all. In fact, the matter requires room, and in my practice it has occured often enough, that after a crooked back, for instance, had been forcibly pressed in, the foreign matter at once began to collect on the chest. The attempt to remove this matter from behind, had therefore been successful, but only at the expense of its reappearance in front. The room which the matter required, could not be taken away from it; one could merely change the place of deposit.

Fig. F (page 91) shows a person in whom the foreign matter has taken up its station upon the middle of the back and forced the body into a permanently bent posture. Such an accumulation is rarer, because the matter, as a rule, pushes on to the extremities. To illustrate this case, I will give you further on a striking example from my practice, shown in Figs. G and H. (page 93.)

In this connection, you will all be reminded of poor humpbacks, who are positively disfigured by their deformity. Most often we find a complete curvature of the spine. In the vast majority of these cases hereditary encumbrance is the cause. But before proceeding to the several forms of disease, I must notice a peculiar kind of deformity.

It often occurs that the matter forces itself up through the neck and collects in the head. I have already mentioned how coldness of the head arises from this. In children it easily leads to an unnatural expansion of the head. A disproportionately large head is always a sign of serious chronic disease. Such an expansion of the head often occurs before birth, and the first result is difficult parturition. And it is a matter of popular observation,

that children with large heads seldom live long. Today your attention has been called to the reason of this, which you will hardly have heard from anyone before. The explanation of this encumbrance I have already given you in the example of the bottle with the india-rubber cap.

Proof of the correctness of these statements can be given only through the cures based upon the theories explained.

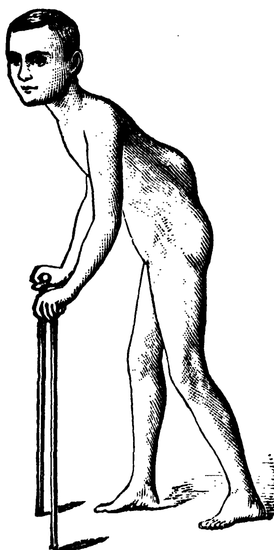


Fig. G.

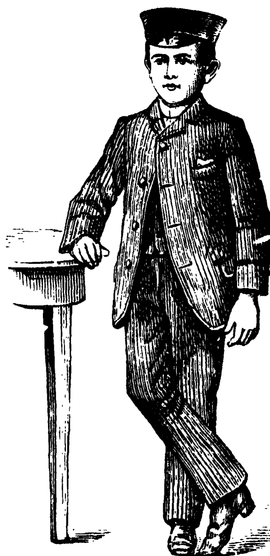


Fig. H.

A large number of such cures has actually been effected under my guidance. The treatment has been the same as in the forms of disease previously described; and though it may sound strange that I propose to cure a crooked back by the same treatment used for coughs and colds, how can I act otherwise, when the cause of the disease is the same? The facts themselves have proved that I am right, for all symptoms of disease disappear when the treatment is perseveringly adhered to. The only condition is,

that the system still possesses enough vitality, and that the nerveconnection is intact throughout, so that the process of healing can take its course. I repeat what I said before: All diseases (or rather, all forms of disease) are curable, but not all individuals.

I will now call your attention to some cures of such cases in my practice.

In the year 1889, a Mrs. H. called during consultation hours, bringing with her in a child's carriage her son, 13 years of age. He was suffering from a painful curvature of the spine, upon which, as shown in Fig. G (page 93) a considerable protuberance had already formed. The boy could walk only with the greatest difficulty, and with the aid of two sticks, and usually had to be wheeled in the carriage. I asked his mother what treatment had been employed. She informed me that the disorder had been so troublesome for over two years as to occasion her to seek medical advice. A well-known physician, a Leipsic professor, had operated upon the boy and tortured him frightfully with an extension bed, steel splints and other instruments of constraint, but with no success. Medical and surgical aid were of no avail, as Mrs. H. had clearly perceived, for which reason she tried household remedies for some time before coming to me. I explained to her that the morbid matter had in this case sought out a place of deposit on the back, and that in order to cure the disease the only way was to remove this matter. She understood my statements, and the treatment began that same day. The boy took three friction sitz-baths daily, each lasting half an hour; the diet was strictly unstimulating and I insisted upon the child being as much as possible in the open air outside the town. In this still youthful body the foreign matter retrogressed with extreme rapidity, so that the result was surprising. After a week, the child no longer needed to be wheeled about, but could walk alone with his

two sticks. A fortnight after, the latter also had become superfluous, and the body was far more erect. After two weeks further treatment, the boy could again go to school, which he had been compelled to give up for a long time. The child followed this treatment for half a year, and was so far restored to health, that he could again carry his body perfectly straight as Fig. H shows.

If I assert that the foreign matter which here produced the disease, was the same as that which produces small-pox, scarlet fever, diphtheria, etc. in other cases, then it would also be expelled from the system, and thus a cure effected, by the same method; and this I proved to these parents in their son's case tó be fact.

The very day on which this boy was brought to me, a woman whose menstruations were attended by an abnormally excessive loss of blood, and a girl 9 years of age, afflicted with a dreadful skin disease (tetters), who had in vain tried every other method of treatment, also sought my advice. Both were treated in the same manner as the boy, due allowance, of course, being made for the individual circumstances, and all three were cured. This, however, could only have been the case if the cause of all three diseases was the same, and this fact the cures proved.

In another case, a man, 50 years of age, succeeded after four years' consistent observance of my treatment, in reinstating the correct relation between the trunk and legs. The former was proportionally too long, whilst the neck and legs were too short. The patient, during the cure, observed that he was gradually outgrowing his trousers, whilst his coat became always more loose about the shoulders. Every few months he had consequently to send his clothes to the tailor for alteration, until finally his body very nearly regained its normal form.

Now after all these remarks, I hope that the unity of all diseases, *i. e.* the uniform cause, has become plain

to you. You can daily meet with proofs of this fact in my practice.

Before concluding this subject I will give you some proofs of the superiority of the *Science of Facial Expression*, over the orthodox system.

The circumstance that many of my patients first sought aid from me in the last extremity, so to speak, after trying all other methods of treatment in vain, has afforded me a deeper insight into the diagnoses of the learned medical profession, than many may believe. I was once consulted by a big, tall man—a picture of health, as people would say—who complained that he was quite unable to work. All the physicians (and he had consulted many) had carefully examined him, as far as rapping, feeling and listening would go, and finally pronounced him to be perfectly healthy that they could find no disease: he merely imagined himself to be ill. The best thing he could do would be to take a trip, so as to divert his mind, and then he would no longer notice any illness. He followed their directions, but received no benefit and therefore came to me. A glance at his neck and head, and an examination of the former when the head was turned to the right or left, showed me plainly that his system was seriously encumbered with foreign matter, the entire body being loaded with it. I prescribed my ordinary treatment; in six weeks he had got rid of so much of the morbid matter that he could send me the welcome news of his ability to work the whole day long. You see which diagnosis was the more practical here. Cases like this, in which the patients are universally declared to be the picture of healt, although they themselves feel very ill, occur almost daily in my practice. Such patients are often very reluctant to consult a physician, because former unpleasant experience leads them to expect their disease to be again styled "imaginary". It is exactly here that I have had such good opportunity of

observing how inadequate is the present system of diagnosis.

Take again a case. A girl of 18 came to me, suffering from *chlorosis* (green sickness). The doctors had said that she was *only* somewhat chlorotic, but otherwise *quite well;* she should take iron and would then soon recover her health. Well, she had taken iron, but the quality of her blood had not improved in any way. My knowledge of facial expression told me that she could not be "quite well" and at the same time be chlorotic, for her system was encumbered with much foreign matter. All the minutest blood-vessels, which should convey the blood to the skin, were obstructed. The blood could not reach the outer skin in sufficient quantity, wherefore the latter assumed a pale, sickly appearance. The cause of this ailment was imperfect digestion of many years' standing, as the patient herself admitted. And here I will observe that most people unfortunately do not know what a really normal digestion is, the full importance of such being therefore seldom recognized. This is a matter of daily experience in my practice. I prescribed the same treatment for this young lady as for the patient last mentioned, and in the course of some months the disorder was removed and the patient's appearance wholly changed. You see that the diagnosis of medical science was again at fault regarding the true state of the patient. For the chlorosis was merely an outward symptom of the disease, which was itself produced by the foreign matter; and the latter, again, had been left behind in the system owing to imperfect digestion. Now, I ascertained all this by a glance at the patient's neck and head, whereas the representatives of medical science had missed it altogether.

Another case. I was visited by a woman suffering from most obstinate constipation. No remedies were any longer of use and the doctor had told her that she should make her mind easy, even perfectly healthy persons suf-

fered from constipation and it must get better of its own accord. I ascertained that the woman was heavily encumbered with foreign matter, which produced, especially in the abdomen, a high chronic fever heat, that dried up all the mucous secretions of the intestines and almost burnt up the fæcal matter, so that it remained hard and dry in the bowels. I prescribed my treatment, and in a remarkably short time, after the very first baths, the internal heat was drawn to the outside, and the bowels opened. In this case, too, you again plainly see the inadequacy of the usual method of diagnosis. I would almost assert that there is no more mischievous and wide-spread error than this, that a person can be in perfect health and yet suffer from constipation. How far is such an idea of disease removed from the truth! It is really nothing more than what might be held by any child, who sees the mere external symptoms which it cannot account for. Debilitated digestion is, as I maintain, the mother of all diseases.

An able physician once said to me, that in many anatomical examinations of bodies, he had often racked his brains to find out why the diseased had died of this or that disease and not of some other. All parts of the body and the internal organs were in perfect order, and nowhere could a trace of disease be seen. I answered that the difference between his diagnosis and mine consisted in this: That the physicians chiefly endeavour to learn by the dissection of dead bodies, whereas I attend only to the processes going on in living bodies, and study the causes and interruption of such, all observation of corpses being consequently worthless to me. To make my meaning clearer I adduced the following illustration.

A person goes to buy a sewing machine. He sees a great number of first-rate machines standing in the salerooms and chooses one. He finds no external defect, the workmanship seems perfect, down to the minutest details.

A friend now points out to him, that the machine may well look perfect when at rest, since any defect will first become apparent when it is set going. When working, a defect not to be remarked otherwise, will render the whole machine valueless; and therefore he had better test it in operation. The case is similar with the human body. When inactive —which here signifies dead—it is often impossible to say what is the matter. In the living body every regularity is directly apparent. Therefore, whoever would study these irregularities (disease in all forms, and its symptoms) cannot attain his end by the dissection of dead bodies, but solely through the observation of living ones. My Science of Facial Expression is based on such observation.

Having now, as I believe, proved the unity of all forms of disease, I may add that the usual diagnoses of modern medical science for the names and seats of diseases are quite superfluous, and as far as cure is concerned, utterly useless. They may, indeed, easily lead to error. The only question is, to decide *whether a body is healthy or diseased; that is, whether it is free from morbid matter or encumbered with it,* and in what way this encumbrance has come about, and how long it has been going on, so that we can approximately estimate the time required for a cure. For as soon as we know that the body is diseased, we also know what steps to take to render it healthy, so that all errors in the treatment of a patient are excluded from the outset.

My Remedial Agents.

Steam-baths. Sun-baths. Friction Hip-baths. Friction Sitz-baths.

AFTER having had a description of a number of illnesses and their cause, it will be necessary to become acquainted with the means of curing the various diseases with which mankind is afflicted. And here, again, we must expect to find unity of cure, for the very reason that all forms of disease have one common origin.

First of all come *steam-baths, of which several forms may be applied.* The steam-bath is the most reliable means there is of restoring the skin to regular action. And this is an indispensable condition for all those who desire to maintain their health, as well as for those who wish to become healthy.

The Whole Steam-bath. For a long time I endeavoured to find a really simple and practical apparatus suited for general family use, and also for cases of serious illness. I was led finally to construct my own Folding Steam-bathing Apparatus. (See advertisement at the end of this book.) This appliance, when folded together, takes up no more room than an ordinary chair and can be set up by anyone.

The only things required in using this apparatus are a large blanket, a few pots and one of my hip-baths, or a wash-tub. A particular advantage of this apparatus is, that

either the whole body, or only particular p, can bearts submitted to the action of the steam, just as desired.

Having set up the apparatus in the manner shown below (see Fig. A), boil some water in three or four pots on an ordinary fire; or, better still, employ my specially constructed *steam-pots with spirit-heaters* and *water-compartments. Three* of these steam-pots are required for a full steam baths. They render all assistance unnecessary.

If ordinary pots are used, it is better, for the sake of convenience, not to fill them quite full.

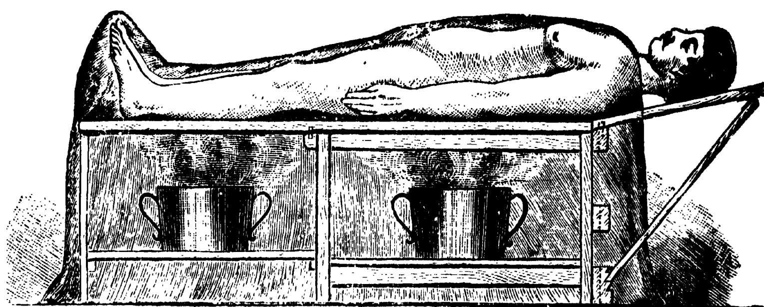


Fig. A.

As soon as the water boils, let the patient lie down, quite unclothed, upon the apparatus, preferably upon his back at first. He should then cover himself up with a woollen blanket, letting it hang down loosely on either side, far enough to prevent any steam escaping. It is well, at first, to cover up the head, too, with the blanket. Another person, lifting the blanket a little, places the pots under the bench. The heat can be regulated as required, by lifting the covers of the pots more or less, thus allowing more or less steam to escape. In the case of adults, two or three pots should be used; for children one will suffice. One pot should be kept boiling on the fire as a reserve. The first pot—in the case of little children, the only one—

should be placed in the front compartment under the small of the back, the second under the feet, and the third, when required, somewhat further up than the first, under the back.

As soon as the supply of steam begins to diminish (after about ten minutes), put the reserve pot from the range in place of the first, and set the latter on the fire. As a rule, the pot uuder the feet does not need to be renewed. When my special *steam-pots* with spirit-heating are

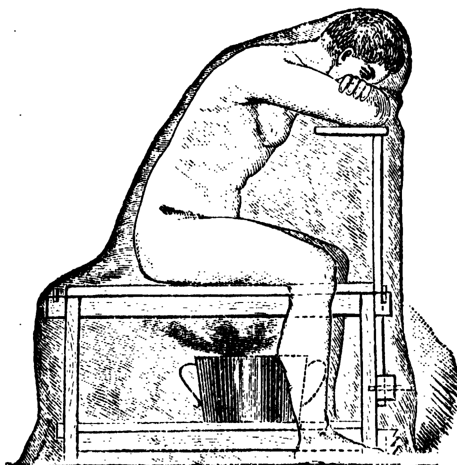


Fig. B.

used, these directions, of course, do not apply. All changing of the pots is then obviated, as is explained in the full and clearly worded instructions always supplied with the apparatus.

In from ten to fifteen minutes the patient may turn over, in order that the heat may better reach the chest and abdomen. Should perspiration not have broken out already, it will now do so most profusely, the head and feet beginning to perspire simultaneously. In the case of children, a renewal of the pots of water is often unnecessary.

Persons who do not perspire readily, should keep the head covered; this will not be found to be so disagreeable as may at first be imagined.

The perspiration may be kept up for a quarter or half an hour, as desired, and the pots renewed or not, at will. Those parts of the body which are especially encumbered with fermenting matter, perspire with difficulty, and the patient himself will experience the desire for greater

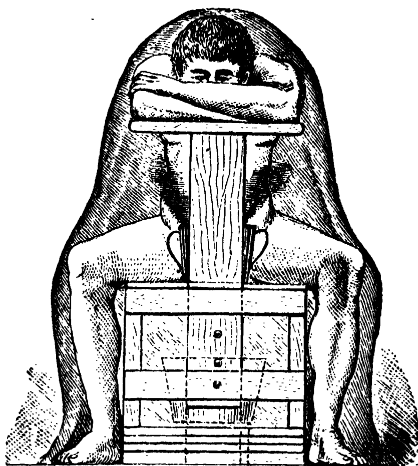


Fig. C.

heat at such places. His request should always be complied with, for this is the very way in which such successful cures are effected by means of these steam-baths.

Weak persons, and such as are seriously ill, more especially nervous patients, should never take steam-baths. For such, the most effective cure is attained by the use of friction sitz and hip-baths, which act derivatively, in conjunction with sun-baths. Persons who naturally perspire easily, can sometimes dispense with steam-baths altogether. *More than two steam-baths weekly should be taken only if specially prescribed.*

On leaving the steam-bath, a friction hip-bath at from 68⁰ to 81⁰ Fahr. should be taken in order to *cool down the body.* The manner of taking the friction hip-bath is described in detail on page 109, the apparatus being shown in Fig. D. At the commencement or conclusion of the bath, however, in addition to the abdomen, all the remainder of the body (chest, arms, legs, feet, head and neck) should be very quickly washed over, so that they likewise may be cleansed and cooled down. The warmer the body, the less it feels the cold; on perspiring, there is no excitation, but only the skin becomes thoroughly warm; there is no reason to fear the effects of such a bath. Steel, when brought to white heat in the fire, must be plunged into cold water in order to obtain the requisite temper. Similarly the human body after the steam bath, on being cooled down becomes strong and hardy.

After the friction hip-bath, it is necessary that the bather should again be warmed, so as to induce slight perspiration. Strong patients can attain this warmth by exercise in the open air, especially in the sun. Weaker persons (though such must be very careful in taking steam-baths at all) should be well covered up in bed, the window being left open a little.

Steam is produced immediately water reaches 212⁰ Fahr.; that produced in the pots, therefore, is exactly the same as that developed in steam-boilers. The only difference is as regards the *amount* of steam developed; and one trial will convince anyone that the pots are quite sufficient for the purpose.

Where neither my steam-bathing apparatus, nor a *cane-seated bench,* which might be used as a substitute, is to be had, an ordinary *cane-seated chair* can be made to serve the purpose. The patient seats himself upon it and is completely covered up with the blanket. Under the chair is placed, as described above, a pot boiling water, while

the feet are placed over a second pot half full of boiling water, across the top of which two strips of wood have been laid.

My steam-bathing apparatus has the great advantage, however, as already pointed out, that the steam can also be applied only to particular parts of the body, if desired. Fig. B (page 102) shows a

Steam-bath for the Abdomen, which is especially adapted for use in obstinate abdominal complaints and in cases of chlorosis, menstrual disturbances and other female diseases.

The manner of applying it is clear from the illustration. Only one pot need be used at a time, being renewed as the patient may desire. As the remaining parts of the body also become warmed, the whole abdomen must be cooled down just as after the steam-bath. In fact, the entire procedure in both cases is the same. In many cases, especially in diseases of women, it is well, after the steam-bath, to take a friction sitz-bath. This, or the friction hip-bath, must be continued so long until a feeling of coolness commences.

When carefully carried out, these steam-baths have a surprising effect.

A Steam-bath for the Neck and Head, is shown by Fig. C (page 103). The vessel is set on a board laid upon the bench and the head and neck steamed until they perspire profusely. When perspiration begins, any pain will always cease; this is peculiarly noticeable in the case of toothache. The head and chest, if warm, must be quickly washed over with cold water and a friction hip or sitz-bath then taken at once. Should the pains return after a time, whole steam-baths (particular attention being given to thorough steaming of the abdomen) and neck steam-baths may be taken alternately.

These partial steam-baths are of high importance, and afford remarkably quick relief, *e. g.* in troubles of the ears,

eyes, nose and throat, and particularly in toothache, and the treatment of boils and carbuncles.

Partial steam-baths can also be given, though not so conveniently, without my special apparatus. The abdominal steam-bath can be taken on an ordinary cane-seated chair; for the head steam-bath, a kitchen-bench may be used, the pot being set upon it and a chair placed in front to serve as a rest for the arms.

The Sun-bath. The method of taking sun-baths, which of course can only be done on *very warm, sunny days,* is as follows. The patient lies down, lightly dressed, on a spot well sheltered from the wind, and preferably on a plaid or mat. Shoes and stockings must be taken off, and women and girls must not wear a corset. Head and face should be protected from the rays of the sun, which is best effected by means of a large green leaf, such as a rhubarb leaf, or by a number of smaller leaves. The naked abdomen must also be protected in the same manner by a leaf, or where not at hand, by a wet-cloth.

A sun-bath should last from $^1/_2$ to $1^1/_2$ hours. Patients who do not perspire easily, can lie still longer, provided they do not feel too tired. On very hot days the bath should not be continued too long.

Those who at first get a headache, or feel dizzy, on taking a sun-bath, should let the first baths be of short duration. This particularly applies to patients who either do not perspire at all, or only with the greatest difficulty.

After the sun-bath, a cooling friction hip-bath (see page 109) or friction sitz-bath (see page 110) should be taken to carry off the morbid matter which has been loosened. Patients who do not easily recover their warmth after the cold friction hip or sitz-bath, should sit again in the sun, the head being protected; or they may take a walk in the sun. This applies particularly to patients who are seriously ill, and to delicate persons. Indeed, for such,

the sun-bath is frequently altogether too vigorous a remedy and should not be used at the commencement of the cure

The best time for taking sun-baths is from 10 a. m. to 3 p. m. They may, if desired, be taken just after the mid-day meal, but it is better to wait half an hour, or an hour, since digestion demands bodily warmth, and the cooling baths following the sun-baths would cause too great a diminution in the heat of the body.

Partial Sun-baths. I have made use of partial sun-baths with the best results in cases where there is a *deposit of nodules,* for *open sores, induration, tumours* and *internal growths, painful places* of all kinds etc. The partial sun-bath is taken in the same manner as the whole sun-bath, except that in addition, that particular part of the body, which is to receive the partial sun-bath, is bared and protected against the sun by one or more green leaves.

Concerning sun-baths in general, it may be remarked that with water and diet. the sun is the most important remedial agent we have; and there is no other way in which we can attain a like effect. In chronic cases, especially, there is no other such effective and at the same time mild remedial agent as the sun-bath, for exciting and expelling foreign matter. A comparison will make this clear to the reader. It is well known that if soiled linen is laid in the sun, the dirt dries in all the more. But if we put the linen alternately in sun and water, the sun extracts the impurites more or less, and thus renders the wash cleaner: it bleaches it.

The existence of all living beings on the earth depends upon the alternate action of sun, water, air and earth. Plants and trees can only thrive if they can get sun, water, air and earth; as soon as these factors of life are partly or wholly withdrawn, the plant or tree becomes stunted or fades. It is just the same with all other life, and therefore also with man. Unfortunately most people avoid sun

and water far more than is good. The body becomes effeminated and a disposition to disease is the result. A healthy person, can bear the heat of the sun without bad effect; a diseased or sickly person, on the contrary, avoids it instinctively, because it causes a feeling of uneasiness. The rapid movement of morbid matter in the body, brought about by the sun, naturally causes headache, giddiness, lassitude and heaviness, if the secretory organs are still too weak. These symptoms, however, are a sure indication that foreign matter is being dispersed. The sun-bath alone, without the subsequent water-bath, would never enable us to attain the desired result; the water has the effect of raising the vitality of the body, to increase which must be our first aim. Plants also, only thrive under the alternate action of sun and water, and soon wither if exposed to the sun alone. When we have once grasped the way in which Nature works, there can be no difficulty in our understanding how, as may occur in chronic diseases, the momentary disturbances *(curative crises)* called forth by the sun-bath, may be counteracted immediately by cooling water-baths, My water-baths, already described, in connection with sun-baths have a wonderfully curative effect.

One might imagine that the action of the sun upon the naked body would be much more intensive than upon the body when covered over or dressed. This, however. is a great error. A glance at nature suffices to convince us. Look at the *vine,* for instance: do not the grapes always seek protection under the leaves against the rays of the sun? They ripen best if everywhere guarded by the leaves, those which are exposed to the sun remain sour and small. The same is the case with *cherry trees,* if when the fruit ripens, the leaves have been all eaten by caterpillars. The fruit does not ripen better than otherwise would have been the case; on the contrary, the cherries wither up without ever attaining their full size. Every

fruit requires leaves for its protection when ripening. The examples just cited from nature, show us most clearly what a difference there is in effect between the direct and indirect influence of the sun.

The action of the sun upon the uncovered head is injurious, all kinds of troubles arising from such exposure. If we keep the body covered with our clothes, the skin opens its pores readily, soon becomes moist and warm and begins to perspire. But the action is greatly increased, if we lay over the naked body a cover containing much water in bound condition. Exactly such a cover is formed by large green, succulent, fresh leaves.



Fig. D.

It is well known that through black clothing the sun's rays act quite differently than through white. It is, therefore, not a matter of indifference whether we use clothes, or cloths, or green juicy leaves as protection. Many years of observation *in my establishment* have convinced me, that by far the best dispersive action is exercised on the morbid humours of the body, if the sun shines through green leaves. Sun-baths, combined with my other remedial agents, will thus be found of extraordinary value, especially in cases of nodular deposits in the abdomen, in green-sickness, anæmia, consumption and gout.

The Friction Hip-bath. This is taken as follows: A bath of the shape shown in Fig. D, is filled with water just so far as to reach to the thighs and navel. The water should be at 84° to 68° Fahr., and the bather, half sitting

and half reclining should then briskly and without stopping, rub the entire abdomen from the navel downwards and across the body with a coarse moderately wet cloth (jute, coarse linen). This should be continued until the body is well cooled down. At first 5 to 10 minutes will suffice; afterwards the baths may be somewhat prolonged. For very weak persons and children, on the other hand, a few minutes are enough. *It is highly important that the legs, feet, and upper part of the body should not be cooled* with the rest, as they usually suffer from want of blood; the former should, therefore, be wrapped in a woollen blanket. After the friction hip-bath, the body must immediately be warmed again, this being best effected by exercise in the open air. In the case of patients who are seriously ill, or very delicate, warmth may be restored by their being put to bed, well covered up. Should warmth return too slowly, a body bandage may be used. (See advertisement at the end of this book.)

Such friction hip-baths can be taken from once to thrice daily, and the duration and temperature likewise suited to the patient's condition. In many cases, friction sitz-baths should be taken instead, or *both* baths may be taken.

The Friction Sitz-bath. This is of special importance in *diseases of women,* and is taken in the following manner.

In the same bath as last mentioned, a foot-stool, or a wooden seat as made by me, is set. Water is then poured in, but *only so much, that it rises to a level with the upper edge of the seat leaving the top dry.* The bather then sits down upon the dry seat, dips a coarse linen cloth (jute or a rough towel) into the water and begins gently to wash the genitals, always bringing up as much water as possible with the cloth. It is important that only the external lips, and never the inner parts of the sexual organs, are washed; and they must not be roughly rubbed

backwards and forwards, but only gently laved with as much water as can be brought up. With this bath also, it will be seen, the legs, feet and upper part of the body remain dry; but should the buttocks become wet, it is of no consequence as regards the action of the bath. The baths should be discontinued during the periods. If, however, there should be abnormal menstruation, they can be continued during this time also; but only if given as *specially prescribed* by me in each individual case. The periods should not occupy more than from 2 to 3 days, or at most 4; a more prolonged menstrual flow indicates an abnormal and morbid condition.

The water for these friction sitz-baths should be at the temperature at which Nature supplies it (50° to 60° Fahr.), though in special cases, water a slightly higher temperature (up to about 66° Fahr.) may be taken.

The bath may last from 10 minutes to an hour, according to the age and condition of the patient. The room should be kept comfortably warm, especially in winter. The colder the water in these friction sitz-baths, the better the result. But it should never be colder than the bather's hands can bear it. In the tropics and hot countries, it is not possible to get such cold water as here; but it can be taken as cold as it is to be had. There need be no fear as to the working of the bath in such cases, for the relation between the temperature of the water and the temperature of the air in these warm countries, very nearly agrees with such relation here at home; so that the effect of the bath will be the same in both cases. This opinion has been confirmed in every way, by reports which I have received from tropical regions.

Where no *hip-bath* is to be had, any wash-tub whatever can be employed for the friction sitz-baths. It has only to be large enough for the reception of a stool or some other convenient seat, and contain at least from 5 to 6

gallons of water, reaching up to the edge of the seat. If too little water is taken for these baths, it soon grows warm, thus rendering the bath less effective. Soft water is preferable to fresh spring-water. Where, however, only the latter is obtainable, it is well to let it stand a while, taking care that it does not get too warm.

In almost all better class families, similar baths are taken over a bidet, simply for the sake of cleanliness. Such cold water, however, is not used; nor is the bath taken for the same length of time, nor in the same manner as prescribed by me.

For *males* the bath is arranged in the same way, and the extremity, that is, the extreme edge, of the foreskin is washed in the *cold water*. The bather with the middle and forefinger, or the thumb and forefinger, of the left hand, draws the foreskin as far as possible over the tip of the glans penis, so that the latter is quite covered and protected against the rubbing. He then, without interruption gently washes the extremity of the foreskin, thus held between the fingers, with a jute or linen cloth of the size of a handkerchief, held in the water in the right hand. It is very important to exactly follow these directions. Anyone, therefore, who does not feel sure whether he understands the correct manner of proceeding, is strongly advised to *apply for special particulars,* so as to save himself needless trouble and loss of time, perhaps even positive injury to his health.

In the case of patients suffering from inflamed or gangrenous places in the interior of the body; or where there is a change from chronic, latent disease to acute, the internal inflammation is very soon, frequently after the first bath, attracted downwards, reappearing in the spot rubbed, or in its immediate neighbourhood. This is by no means an unfavourable symptom. In Part II, in the chapter on cancer, I shall treat of it more in detail. There need

be no anxiety on account of chafing; the baths should be continued as before, a rather softer cloth being used if desired.

In many cases a still quicker effect will be obtained by letting the water stand three fingers high *above* the seat. The water in such case should be from 63° to 73° Fahr. The buttocks are then in the water; for the rest, the procedure is the same as before.

It may appear inexplicable to many, that just the particular part of the body mentioned, and no other, should be chosen as the place to apply these baths. But as a matter of fact, there is no other part so suitable for the purpose. In no other spot are there so many important nerve-terminations. These are especially the branches of many spinal nerves, and of the *nervus sympathicus,* which owing to their connection with the brain, render it possible in this way to exert an influence upon the whole nervous system. It is only at the genitals that the *entire* nervous system can be influenced. Here is, in a sense, the root of the whole tree of life. By washing in cold water, not only is the morbid internal heat diminished, but there is also a marked invigoration of the nerves; that is, the vitality of the whole body, down to the minutest part, is stimulated. Exceptions occur only where the nerve connection has been interrupted, for instance by surgical operation.

Every reasonable person, not fearing a practical experiment, will admit that the friction sitz-bath, in the form prescribed by me, fulfils all the conditions requisite for the restoration of the proper bodily functions.

It is to be remarked that the *friction sitz-bath* which has already brought aid to thousands, *is intended only for the sick in health.* Everyone who knows to what painful, as well as disagreeable and indecent operations the human body is very often subjected by orthodox medical science, will look upon the simple, yet surely curative, friction sitz-baths with an unprejudiced eye. Least of all is *prudery*

in place where it is a matter of benefiting the suffering. Upon completely healthy persons the friction sitz-bath has no effect, and is moreover not recommended to such. They will find it tiresome, whereas the *sick patient* will often continue it longer than is required.

Here it is also necessary to call attention to the continual offerts at equalization met with in nature. These are not limited, as is often falsely imagined, to physical processes. They are also found in the regular change of temperature of the human body in relation to that of its surroundings. There is a change of temperature from within to without, from without to within, not incorrectly designated as an electric current. And as with the purely physical current, there must here be a certain tension. Now the higher this increases, as, for instance, in the case of the body seized by fever, the more unbearable becomes the condition of the person, and the more intensive is the symptom of disease. Like a storm-cloud with its sultry, uneasy oppression, so acts the encumbrance in the human body. Now what can be more natural and more rational than to bring about equalization? The higher temperature must be equalised with the lower; the surplus reduced to the normal. And the bridge, leading to this end is, together with my other remedial agents, the friction sitz-baths, which for the various reasons already explained, must of course *only be taken with cold water.* Their working is incomparable and in numberless cases most effective. Where the desired result is not attained, it is because the body has lost its vitality.

If the body is loaded internally with morbid matter, so that it may be compared to a rusty machine, the debilitated digestion will no longer be able to procure sufficient vitality from the usually quantity of food to maintain the person in his former condition. Larger quantities of food are required than before, and as a rule particulary stim-

ulating food, in order to keep him in condition to work. But in this case, naturally, the digestive powers will continue decrease more and more.

If we wish again to raise the vitality of the body, we can only do so by the agency of some means which improves the *digestion.* The best means known to me are, together with natural diet, these cooling baths. They improve even the worst digestion, (so long as this is capable of improvement at all), within a shorter time than any other remedy; and moreover act in a natural manner. Furthermore, these baths diminish the fever-temperature, caused by the friction of the morbid matter, to the normal, whereby further development of the disease is prevented. If we wished to change the steam rising from boiling water in a room—to take an example from daily life—back to its original form, water, the only way would be to reduce the temperature. It is the same with the morbid matter, that is, with every disease. Disease arises by reason of increased temperature in the body, and can only disappear if the opposite condition is produced, that is, by continual cooling and reduction of the excessive internal heat.

But exactly as a machine can only be properly driven from one point, faster or slower as the case may be, so it is with the human body. The vital power can only be properly influenced from one point—that which I have selected for the application of the friction sitz-baths.

After this explanation it will be plain to all, how it is that I successfully treat diseases of the eyes and ears with the same remedy *(adapted, of course, to the circumstances of each individual case)* with which I, in other cases, cure scarlet-fever, small-pox, cholera, etc. The vitality of the *entire* body is raised, and at the same time there is no possibility of one part being more excited than another, unless, as stated above, nerve connections have been interrupted. How heightened vital power manifests

itself, is, however, quite unknown to most people, and often precisely the opposite to that which the patient expected, occurs. For instance, it may happen that smokers after using these baths can no longer continue the use of tobacco and are consequently inclined to think that their stomachs have been weakened, whereas just the contrary is the fact. Previously their stomachs were too debilitated to resist the nicotine, whilst now they have regained the necessary vigour to rebel against the poison. Wherever the nerves are still capable of being strengthened by these baths, the system will always recover the power of expelling, by the natural secretory organs, the foreign matter which has gradually collected in it.

In addition to the friction sitz-baths, *earth (clay) bandages* round the abdomen, will be found most effective in decreasing the external heat and breaking up the morbid matter. Such bandages are also most beneficial in cases of direct injuries and sores.

No one should suppose, however, that these remedies (adapted to the circumstances of each individual case) will infallibly cure every patient. As I have already remarked, I can cure all diseases but not all patients. For where the *bodily vitality* and therefore, the *digestive power,* is already *broken down,* these remedies will afford *relief,* such indeed as no other means will, but they *cannot* in such case *effect* a complete *cure.*

There are also severe cases where my baths must only be used with the greatest moderation, where often, indeed, they should be temporarily discontinued. In such serious cases it would appear *inadvisable* for *patients themselves to proceed* simply on the basis of these directions, without a more intimate acquaintance with my method. *In such cases it is better to apply to me by letter, so that no ill effects may result from the application of the cure.*

What shall we eat?—What shall we drink? The Digestive Process.

FROM the explanations given about the friction sitz-bath and human vitality, we have seen that disease can only arise as a consequence of wrong food. It is only through bad digestion that foreign matter can form and disease develop in the body. Thus the questions: "What shall we eat?—What shall we drink?" are of the greatest importance for us.

As is well known, in order to produce elektric power, or a constant electric current, certain definite elements are necessary. It is only with the aid of an acid that we are able through the decomposition or transformation of the zinc and carbon plates, to set free the power which formerly was required to retain the plates in their original structure. This power is then conducted as positive and negative current through wires, to be used as electricity. If, however, in place of these elements (zinc and carbon), we were to substitute others, which resemble them—or consist of similar constituents, or even of the same materials, (zinc and carbon), but in another form, for instance, pulverized—we should soon notice a difference. We should then either get no generation of electric power at all; or it would be essentially changed, diminished, in spite of the fact that the conditions may otherwise be exactly the same as in the case of the zinc and carbon plates. It is similar with the generation

of vital power in the human body. Here also, the development of more or less vital power, depends upon the right choice of elements, in this instance, of food. This is most clearly to be seen in the case of atmospheric air, our chief food. We have only to take a person for some minutes away from his normal air, and put him into another gaseous atmosphere, and we shall see at once how he dies in a few minutes, the new element not enabling him to maintain his vital power.

The injurious effects of a wrong diet are slower and less striking. The boundary between natural food and deadly poison is very wide. The step from the natural to the unnatural is often so small as to be at first scarcely perceptible But as we know that foreign matter only forms as the result of wrong food, that is, can only arise in the body as the result of bad digestion, it must be our task to avoid such wrong foods and such bad digestion.

In order to make clear this matter of wrong food and bad digestion, I will here cite a few instances which occur in daily life. We meet stout, corpulent people, who assure us that they eat and drink very little, but complain that they nevertheless are always growing stouter and stouter. Such persons suffer from over-nutrition. Others are scraggy, lean, emaciated, although they are consuming unusually freely what, in their opinion, are the most nutritious foods and drinks. Judging by the quantity consumed, such persons should be in quite another condition. The food passes through the body, but the latter is unable to benefit by it. A large part of the food passes away unused, or at all events insufficiently utilised. This proves that the mere fact of foods and drinks passing through the body, is no proof at all of a normal digestion, as many people, unfortunately, seem to think.

We thus have two opposite classes of people. The one demonstrates to us how by eating and drinking little,

one becomes stouter, the other, how by eating and drinking much, one becomes thinner. In spite of apparent contradiction, the reason for the ailment is in both cases the same; that is, bad digestion and wrong feeding. This premised, and we can readily understand how, for instance, a consumptive person can eat what he considers the most strengthening, nutritious food withhout his body benefiting at all; whilst, on the other hand, we shall no longer wonder about the want of appetite on the part of apparently strong, but nervous people.

After these explanations, and remembering the remarks upon vital power in the last chapter, it is not difficult for us to find the way to avoid over-nutrition. The reflective reader will no doubt already have come to the conviction, that the most nourishing and suitable foods and beverages are not flesh-meat, eggs, extracts, wine, beer, cocoa, coffee, tea, etc., but only such foods as can be quickly and easily digested. The more rapidly our body can digest the food presented to it, the more it will be able to utilize such, and therefore the more vital power it will be able to generate. The degree of the vitality depends, therefore, upon the digestibility of the food consumed.

The more dificult of digestion a food is, the longer the time required by the body to perform the work of digestion. If we consume such foods, then we must at any rate, if we will not injure our system, wait before eating egain, until the first meal has been properly digested. Unfortunately, this is very seldom done, especially as our daily habits are antagonistic to such apparent *fasting*. The true significance of fasting is thus practically unknown to us to-day. Man disregards altogether, as a rule, the fasts laid down by nature. On the contrary, we see him in winter, where generally speaking he has more time than in summer, eating oftener and more than in the latter season. We find almost everywhere the erroneous

opinion prevailing that in winter one should eat well and consume plenty fat, in order to be able to withstand the cold. This, however, is in flat contradiction to all natural laws. How often, very often, have I had occassion to observe the injurious effect of eating and drinking too much during the winter. In nature, we find everywhere a certain period of fasting. We see how snakes fast often for weeks, after have taken a good meal. We see how deer and hares for weeks and months live most sparely, and yet overcome all the fatigues of a raw, cold winter. Were these animals in the situation to obtain the same amount of food as in summer, they would without doubt become ill and be unable to withstand the winter cold. Cold retards, as we know, every process of fermentation, and therefore the digestion. Thus a quantity of food which in summer would be easily digested, in winter is much more difficult to digest. Hence the reason for the fact that our domestic animals, which for the most part are fed in the stall, and almost always suffer from over-nutrition, are unable to stand the winter cold in the open; whilst animals in a state of nature, can endure even the fiercest storm, for they possess a power of bodily resistance unfortunately for too little regarded to-day.

These expositions now make it obvious to us, that disease only arises through a kind of over-nutrition. And we come thus naturally to the conviction, that it is by no means a matter of indifference, *what we consume, in which form we consume it, and where we consume it.*

To render the matter clearer, I will again introduce some examples.

If we drink boiled water, it tastes flat and disagreeable. How refreshing, on the other hand, is a draught of fresh water, how invigorating an apple! Just so with the air. Oppressive and relaxing, producing in many a headache—such is the effect of the stuffy, used up air of the average

room, especially if the chamber be small, and a number of persons have been sitting in it. How one longs in such a case for the fresh, animating outside air.

And of like importance is it, where we consume our food. That which we eat in the open air, is always more easily digested than that consumed in the house; because in chewing, the food is mixed with air, and fresh air acts quite differently upon the distibility of the food than the bad air of our rooms does.

As already stated, those foods which are most easily digestible, are exactly those which are best suited to nourish the body. Over-nutrition, also, is *least liable* to occur where the food is easily digested. It is, then, our first point do determine what the most readily digested foods are, that is, those which supply us with most vitality. The answer to this all-important, and much debated question, is as simple as it is natural, and may be given in the following sentences.

Those *foods* which *taste good in their natural state,* and tempt us to eat, are always those which are most easy of digestion, and which supply us with the most vitality.

All *foods* which we have to *change by cooking smoking, spicing, salting, pickling and putting in vinegar, lose in digestibility,* and, as regards *vitality,* are far inferior to food in its natural condition; even though the above named processes may enable the foods to keep longer.

Of *cooked* and *prepared foods, those are most easy of digestion,* which are *most simply prepared* or *cooked,* and *least salted* or *spiced.*

Foods in *fluid form,* such as soups and beverages, as beer, wine, cocoa, etc., are *much more difficult to digest* than those which in their *natural condition are solid,* and capable of being chewed. For this reason, continued use of fluid nutriment tends to dilatation of the stomach and disturbances of the digestion.

bread, however, whole wheatmeal bread (see my receipt page 147) is the easiest to digest. For most breads, only the white, mealy interior of the grain is used, the outside parts being nearly always utilized for other purposes. In this way a fine meal is obtained, but the bread made from it gives the digestion far more work to do, than does wholemeal bread. It thus leads to constipation, the bran, the most important part of the grain, having been rejected.*

Oats, as everyone knows, are an excellent food for horses. But how much depends upon the form in which the oats are given, in order that they may prove a valuable food, every horse-owner will confirm. If we fodder the horses on oats mixed with chaff, they will be able to digest them most easily and will be best nourished. If, on the contrary, we give the animals *oats without chaff,* we shall soon find that they can no longer digest the fodder so easily. If, finally, we give as fodder other grains, such as wheat or rye, without the addition of chaff, we shall see still more clearly than before, from the digestion of the horses, that those foods alone are too heavy. Still more clearly is the difficulty of digestion seen, if we supply the horses only with oats from which the husk has been removed. The animals grow fat on them, but on the other hand become constipated and unfit for work.

The easy digestibility of grain is due chiefly to its shell or husk; the more shell or husk, the better for the digestion. The oat, is, of all grains, that which has the greatest amount of shell, and therefore much better adapted as horse-food than wheat or rye.

Although in the dung, oat-husks and chaff are found apparently unchanged, it is not therefore to be assumed

* Compare also: **"The Rearing of Children"**, by *Louis Kuhne.* A word of warning to parents, and teachers. Published in German, Dutch, Danish and Hungarian. Price of the German edition 6 d. Louis Kuhne, 24 Flossplatz, Leipsic.

that these have been worthless ballast as far as the horse's digestion is concerned. That would be a serious error. This ballast is as necessary to the horse for his normal digestion, as the interior part of the grain. *Food precisely in the form nature gives it to us,* is always the best for the digestion.

For mankind, likewise, it is of the utmost importance in *what form* we take our food. Often we hear people saying: "I cannot digest the pulses, they give me flatulence." But this depends greatly upon the manner in which they have been prepared. In the form of a purée or soup, as they are generally eaten, they certainly are difficult to digest, so that it is no wonder if they cause trouble. As soup, especially, they are objectionable, for soup reaches the stomach *unchewed,* and therefore in a state unprepared for digestion. If, on the contrary, we boil, for instance the peas, in only a little water, so that when cooked they have absorbed nearly all the moisture, and appear in their natural round form, whe shall scarcely consume one third of the quantity that we swallowed down as soup. Furthermore, we shall notice that this smaller quantity, although eaten with the shell, causes no unpleasantness, and is far more strengthening than soup.

I am reminded of a labourer, who, from necessity, was obliged to live for some three months on nothing else than a handful of raw peas daily. With evident delight, this man used to relate to me the episodes of that dreadful time, when he often had for hours to let the peas soak in his mouth, in order to get them soft enough to chew. Yet in spite of this scanty food, he maintained that he felt in the highest degree well, and was, in fact, never better in his life. This instance speaks to the high nutritive value of food in its natural condition. It teaches us further, that also when we are dealing with nutrition, the principle of nature, which we recognize everywhere, is again to be found: to perform the most, with the simplest and smallest means.

My expositions may now have made it clear to my readers, how over-nutrition is to be prevented. Of course, I am not able to state exactly what and how much every person, or every patient should eat, in order to avoid over-nutrition again. There are scarcely two patients whose digestive powers are quite alike, so that the exact quantity, or kind, of food can never be decided offhand. Each must find out for himself what suits him best. It must, therefore, suffice to give the relative digestibility of the various foods.

As regards the digestive process itself, the orthodox school gives us no certain basis to go upon. Even the magnificent discoveries of chemistry, by the aid of retorts, balances, and all kinds of other apparatus, are of little significance for the New Science of Healing.

Digestion itself is a process of fermentation in the body. By it, foods are converted into quite different materials within the human system. The body appropriates for itself as much of them as are suitable, that is, assimilable. All foods, the fermentability of which we alter by artificial preparation, or suppress by means of salt, sugar or cooking, are difficult of digestion; that is, the body can only assimilate them with difficulty. Their fermentability being thus influenced, they require a longer time than ordinarily, before they come into a state suitable for digestion.[1] In other words in order to reach the required condition, they remain much longer in the digestive canal than they should, whereby a higher condition of fermentation and consequently a higher temperature is caused. The greater development of internal heat caused by this condition, contributes finally to the firmer consistency and darker coloration of the fæces in the intestines.

Digestion begins, as is well known, in the mouth. The foods then reach the stomach, where they mix with

the gastric juice, and are thoroughly acted upon. They thus come into a state of decomposition or fermentation which essentially changes them. In the intestines, the process of fermentation increases in intensity, and the fermenting food is further mixed with the secretions of the pancreas, and other digestive juices.

That which is useless for the body is secreted again through intestines, kidneys and skin. Sometimes we observe how animals completely digest, in a very short time, such apparently altogether indigestible things as bones, stones and pieces of chalk (such may be found regularly in the stomach of hens). If now we examine the excrements of such animals, we find absolutely no hard stones or pieces of bone. With men, on the contrary, we find that the food often remains a whole week in the digestive canal. This gives rise to an abnormal condition of fermentation. The gases developed by this fermentation, which are not at all concerned in building up the body, are conducted to the skin, and are expelled as perspiration and efflvuia, and on the other hand as wind. This wind should never be suppressed, since it is highly injurious to the body.

The digestion is normal when the excrements are *light brown, soft* and compact, and covered with a mucous coating, clearly showing the slimy nature of the various juices of the body. They should be of sausage form and leave the body absolutely unsoiled. We observe this in the case of all healthy animals; and so it should be in the case of healthy men. The end of the rectum is of such appropriate form, that when the digestion is normal, the excrements are excreted without the parts being in any way dirtied. Closet paper is an acquisition for *diseased humanity,* as I have already remarked; the *healthy* country population does not use it. Furthermore, the excrements should never emit an *obnoxious, disgusting* odour.

If this is the case, we must conclude that the fermentive

process of the digestion is here more or less abnormal. This leads to *constipation* or *costiveness*. The fæces stick firmly in the dried up intestines and cannot be moved at all. The fermentation nevertheless still goes on within. It compels the hard fæces to change in form, and causes an active evolution of gas, which finally begins to penetrate throughout the body. The internal pressure, and tension caused by this condition of fermentation, tends towards the extremities and skin. If now, the latter no longer performs its functions, so that the gaseous foreign matter finds no exit, more and more of it is deposited under the skin. The latter now becomes still more sluggish, and its temperature decreases below the normal. Its fine blood-vessels become so saturated with foreign matter, that healthy blood, which alone can warm the skin, is no longer able to circulate to the outside of the body. Hence the external temperature of the latter falls, and the *skin* assumes a *chlorotic colour,* of one kind or another. Usually there is a pale corpse-like appearance (Cp. the remarks on Chlorosis, part II); but the exact colour differs, according to the quality of the foreign matter and of the blood. Large quantities of urine in the blood, cause the skin to appear red; in other cases the skin may be yellow, brown or greenish. The external colder temperature, in opposition to the internal heat, causes the gaseous foreign matter to become still harder; compressed together by the united action of the internal pressure and the low external temperature, it fills the surface of the body. In this way a change is gradually brought about in the form of the body, which we call *encumbrance with foreign matter.* The extent of such encumbrance can be ascertained by my new system of diagnosis, the Science of Facial Expression. It is in this manner that all affections of the head, such as diseases of the eyes, ears, and brain, mental debility, headaches and the like arise. With the recognition of this unassailable

fact, we solve at once one of the most puzzling riddles to be met with in the treatment of suffering humanity; and at the same time perceive the utter futility of the teaching of that medical school, which will cure diseases by a purely local treatment.

It is really remarkable what opinions the public has to-day concerning normal digestion. We often hear people saying, for instance: "My digestion is capital, I can eat so and so many beef-steaks and drink so and so many glasses of wine, without experiencing any indigestion. Everything agrees with me, I have a first-rate appetite." All this may be granted, yet such habits are quite as injurious as smoking, say, ten cigars daily. Tobacco is and ever will be a poison to the body; and the body which has to occupy itself in the endeavour to expel nicotine, must, as a matter of course, suffer in consequence. It is just the same with eating and drinking. A perfectly healthy stomach will refuse to retain even the smallest quantity of inappropriate food. By such complaints as eructation, heartburn and oppression, it indicates immediately that too much has been exacted. A debilitated stomach, on the other hand, tolerates apparently everything, that is to say, is has not the power to resist either unsuitable or superfluous food. In other words, the natural function, the natural instinct, is lost. The food leaves the body insufficiently digested, without the latter having received any benefit from it.

The nutritive value of the various foods, depends, it must be specially mentioned, *solely and only upon the digestive power of the stomach, and the capability of the system to assimilate;* it is another thing than the percentage of nutritive material which the food may contain. Wholemeal bread (Graham bread), fresh fruit, vegetables and farinaceous foods, boiled in water and without the addition of fat, sugar or salt contain, as is well known, far more assimilable material for the body tan the best wine, the most expensive

fleshmeat, eggs or cheese. Without doubt, these last named foods, *according to chemical analysis,* also contain those constituents of which the human body is composed, but this is no proof at all that they therefore afford us the most appropriate nutriment.

The human body is able to extract from the simplest alimenta, such as grains of corn, all those constituents which chemistry has pointed to as indispensable for its structure. Grain, such as we find in wholemeal bread, well chewed and insalivated, becomes sour immediately it enters the stomach. Through the process of digestion it is converted into important nutritive material for the body, alcohol, sugar, etc., being formed. *Such material is readily assimilated by the body, because it has been formed by it.* Those constituents of the grain which cannot be assimilated, are expelled again from the body in a certain definite form and of definite colour.

Although the proofs brought forward by me often do not find acknowledgement, the army of continually increasing diseases certainly does not exactly bear favourable witness to the progress of medical science. The public has here a gauge by which to measure the results of the practice of the orthodox medical school. How many have allowed themselves to be led astray by the false teachings of the medical profession; how many have broken Nature's laws in the good faith that they were acting well and wisely. But every transgression brings its own natural punishment in the form of disease or sickliness.

I cannot refrain here from publishing part of a letter received by me from a distant land, from an enthusiastic missionary in Honolulu. He wrote: "The natives here, before the whiteman was known, lived exlusively upon Poi (the national dish of Honolulu, consisting of Taro root beaten into a paste with water, forming an exceedingly nutritious food), with bananas an other fruits. Their only

drink was pure water. They thus lived on a purely natural diet and their stature was gigantic, they were overflowing with health and strength. Then came the whiteman and taught the native that only flesh could give strength and only alcohol, particularly gin, produce energy. It did not continue long before the first cattle were imported and gin was spreading its blessing through the land. In the annals of Hawaii, the name is even recorded, of the Hawaiian chief who first—on May 18th 1819—openly changed his former manner of living. Pork has now become the national food and gin the national beverage; *but with what results!* The majority of the natives (Kanakas) suffer from eruption of the skin, and asthma; sexual diseases are common and there is a great tendency to leprosy, which reaps a rich harvest amongst them." We see, then, how the natives on the new manner of living, brought to them by our much-lauded civilisation, at once became diseased. This fact is another proof of the utter falsity of the theory of dietetics taught by the medical profession. In this case, naturally, the warm tropical climate was most favorable to the propagation of the disease, which in a cold climate like ours would have been much slower in making its appearance.

Let us now consider the theoretical principles upon which a natural system of diet is based. These have been admirably set forth in a lecture by Mr. E. Hering, here reproduced.

We take substances into our bodies through two organs: the lungs and the stomach.* The body has a sentinel for each: the nose for the former and the tongue for the latter. Unhappily, as experience teaches us, neither is thoroughly

* The reception of substances through inoculation with fluids, is utterly contrary to nature, and therefore always accompanied by injurious effects.

incorruptible. There can hardly be a doubt that the fresh mountain air is the best food for our lungs; and in breathing such, our sense of smell is fully satisfied. He who has always lived in this pure air finds it quite impossible to remain for hours in smoky rooms, for his sense of smell warns him at each breath he draws. But if he often frequents such places, the warning voice gradually grows fainter, until finally silenced; indeed, the sense of smell at last becomes so accustomed to the bad air that this even appears pleasant. The sense has been corrupted and time is required before this morbid appetite can again be cured.

But, as we breathe from 16 to 20 times every minute, the ill effects of the direct absorption of foreign matter rapidly make themselves apparent, and thus it probably is that our understanding soon assumes the guidance, when our sense of smell has deserted us.

It is even worse with the tongue which, is unfortunately corrupted from our childhood, and which can, therefore, hardly be regarded as reliable at all. It is well-known, indeed, how the sense of taste can be made to conform to our habits. Nevertheless, it is of prime importance that the body should receive the right kind of nutriment; for all unnatural foods contain substances which are foreign to the body, and thus give rise to disease, as we have already seen.

Let us, then, consider the question: "What diet is the natural one?"

As we can no longer place full reliance on the tongue, we must seek to obtain an answer to this question by the aid of careful observations and conclusions in other directions.

Considered as a whole, the question is a purely scientific one. For its solution, therefore, we must adopt the only method admissible in science, the so-called inductive method, drawing general conclusions from particular cases. We may divide our task into three parts; we must

(1.) Collect observations; (2.) Draw conclusions therefrom; (3.) Make experiments.

The field of observation is an extremely wide one, and it is quite impossible for any one person to familiarise himself with every part. We must, therefore, content ourselves with a few excursions, just as one might make, if one desired to acquaint oneself with the flora of a country.

The ground to be traversed, in making a scientific enquiry into the question of diet, is so extensive that we must decide from the very commencement to keep our consideration within the closest bounds. For to view the matter more comprehensively, we should have to enquire into the food of every organic being whatever. It will, however, suffice for us, if, in order to draw conclusions and to gain a foundation for systematic experiments, we consider only the higher forms of animals, that is, those nearer akin to ourselves. But to save digressions, I shall assume that you are familiar with all points on which general agreement prevails, and which are evident from observation, or have been proved beyond doubt.

A single glance at life in nature tells us, that beings, in order to maintain the transformation of material going on, must necessarily obtain nourishment, in the choice of which, however, they are decidedly limited. A plant which grows luxuriously in the saliferous soil of the sea-coast, dies when transplanted inland; one which flourishes in dry sandy ground, withers in the garden; and cultivated plants accustomed to rich humus, on the contrary, cannot grow in sand.

We observe quite the same thing in the animal kingdom, and in such a marked degree, that we can accurately classify animals according to their food. The classification of animals into those which feed on flesh and those which eat vegetable food only, is known to all; but

this division is only a superficial one. On examining the matter more closely, we find that we must separate the insect-eaters (insectivora) from the flesh-eaters proper (carnivora); and that the vegetable-eaters may be divided into those which live on herbs, grass and the like (herbivora) and those which live on fruit (frugivora). Besides these, we find some few which live on both kinds of food (omnivora). Our observations must also extend to the organs which aid in nutrition, in the case of each class. These afford us so good a clue to the diet, that we can determine, even from the skeleton, to what class the animal belongs. We will turn our attention chiefly to the *teeth*, the *digestive canal*, the *organs of sense* which guide the animal to its food, and the *manner in which it nourishes its young*. Thus there are four excursions which we propose to make into the territory we have marked out for observation.

As you are aware, teeth are divided into three classes: Incisors or cutting teeth, canines or dog-teeth, and molars or grinding teeth. The incisors of carnivorous animals are little developed, and hardly used at all, whereas the canines are of striking length. They project far beyond the rest and in the opposite row a special gap is necessary for their reception. They are pointed, smooth, and slightly curved. They are in no wise suited for chewing, but especially adapted for *seizing* and *holding* the prey. In the case of predatory animals we call these teeth fangs, and can observe how they really are used as such. For dividing the flesh into small pieces, the back teeth are employed, the surface of which is covered with points. These points do not meet, but fit closely side by side, so that in the operation of chewing they only mechanically separate the muscular fibres of the flesh. A lateral motion of the jaw would hinder this process, nor is it possible in the carnivora. It is therefore clear that animals of this class cannot grind their food. We see, for instance, how hard it is for dogs

to well masticate pieces of bread, so that they have finally to swallow the food nearly unchewed.

In the herbivorous animals, the incisors are strikingly developed and serve for biting off grass and herbs. The canine teeth are usually stunted, though occasionally we find them developed into weapons of defence, as in the case of the elephant. The molars are broad at the top and furnished with enamel only on the sides. They are admirably adapted for *crushing* and *grinding* the herbaceous food.

There are not many frugiverous animals; for us, the anthropoid (man-like) apes are the most important. It is in the frugivora that we find the theeth most evenly developed. They have nearly all the same height, only the canines projecting a little beyond the others, though not nearly enough to enable them to serve the same purpose as in the carnivora. They are conical, but blunt at the top and not smooth, so that they could not serve for seizing prey. One can see that they are very powerful; indeed, we know that the anthropoid apes can perform astonishing feats with their teeth. The molars of these animals are furnished at the top with folds of enamel, and as the lower jaw admits of ample lateral motion, their action may be compared to that of mill-stones. The circumstance that not a single molar is pointed is of special significance, for thus we see that they have not one tooth intended for chewing flesh. This is the more remarkable, because the omnivora, to which only the bears properly speaking belong, have both pointed and broad-topped molars. Of course, bears also have canines, like those of the carnivora, without which they could not seize their prey; the incisors, on the contrary, resembling those of the frugivora.

Now, which of these sets of teeth most resembles that of man? There is no room for doubt, for we can perceive without difficulty that the human teeth are formed almost precisely like those of the frugivorous animals. In man the

canines do not grow quite so long as they do in the frugivora, and project very little, or not at all, beyond the others, but this difference is not material. It has often been concluded, from the mere presence of the canine teeth, that the human body is also organized for a flesh diet. This conclusion, however, would be justified only if the canines in man were able to fulfil the same function as the canines of the carnivora; and if, like the bears, we had at least a few corresponding back-teeth for dividing the flesh.

The conclusions which we must draw from our observations are as follows: (1.) Man's teeth do not resemble those of the carnivora, therefore he is not a carnivorous animal; (2.) Man's teeth do not resemble those of the herbivora, therefore he is not an herbivorous animal; (3.) Man's teeth do not resemble those of the omnivora, therefore he is not an omnivorous animal; (4.) Man's teeth almost exactly resemble those of the anthropoid frugivora, therefore it is highly probable that he is a frugivorous animal.

The false deduction mentioned above, is frequently brought forward in another form, as follows: "Judging by his teeth, man is neither a carnivorous, nor an herbivorous animal, but stands in the middle position between the two, therefore he is both." We need scarcely point out, that this conclusion is logically quite untenable. The notion of a middle position is much too general and indefinite to find application where scientific proof is required; only in mathematics does it admit of a definite conception.

Let us now enter upon our second excursion through the rich field of observation, and turn our attention to the digestive canal of the animals. Predatory animals have a small, almost round stomach, and the intestines are from 3 to 5 times as long as the body, measuring the latter from the mouth to the root of the tail. The herbivora, particularly the ruminants, have a large compound stomach, and the intestines are from 20 to 28 times the length of

the body. In the frugivora, the stomach is somewhat broader than in the carnivora, and in the duodenum they possess a continuation of it, which may be described as a second stomach. The length of the intestines is about 10 to 12 times that of the body. In anatomical works it is often stated that the intestinal canal in man is from 3 to 5 times as long as the body and consequently more suited for a flesh diet. This is to accuse Nature of a flat contradiction: as regards the teeth she has formed man, in the popular opinion, as an omnivorous animal; as regards his intestines as a carnivorous one. But this contradiction is only apparent. In the above comparison, the length of the human body has been measured from crown to sole: whereas to conform with the other cases, only the distance from the mouth to the end of the spine ought to be measured. The conclusion drawn, therefore, is a false one. The length of the human intestines is from 16 to 28 feet, depending upon the height of the individual, and of the body from head to end of spine $1^1/_2$ to $2^1/_2$ feet, a division yielding a quotient of about 10 or 11. And thus for the second time we arrive at the conclusion: "Man is a frugivorous animal."

On beginning our third excursion, let us consult the sign posts to our diet—the senses. It is chiefly by the senses of smell and taste that animals are directed to their food and at the same time incited to eat. When a predatory animal finds the scent of game, his eyes begin to sparkle, he follows the trail with eagerness, springs upon his prey and greedily laps up the warm blood, all this evidently affording him the keenest pleasure. The herbivorous animal, on the contrary, passes quietly by his fellow creatures, and can at most be induced by other reasons to attack them, his sense of smell would never betray him into eating flesh; he will even leave his natural food untouched if it is sprinkled with blood. The senses of smell and sight lead him to grass and herbs, which also gratify

his taste. We notice the same thing in the case of the frugivora, whose senses direct them to the fruits of the tree and field.

But how do the human organs of sense act? Do the senses of sight and smell ever entice us into slaughtering an ox? Would a child, who had never heard anything of the slaughtering of animals, even if it had already eaten meat, ever think, on looking at a fatted ox: "That would be a tit-bit for me"? Only when we can associate in our mind the connection between the living animal and the roast as it comes upon the table, are we capable of such thoughts; they are not given to us by Nature.

The very idea of killing is abhorrent to our senses, and raw flesh is agreeable neither to the eyes, nor the nose. Why are slaughter-houses always being removed further and further from our towns? Why are there, in many places, bye-laws forbidding the transportation of flesh uncovered? Can this in point of fact be styled a natural food, when it is so offensive both to eye and nose? Before being eaten it has, by means of condiments, to be rendered attractive to the senses of smell and taste, unless indeed these have already been abnormally deadened. How delightful, on the other hand, do we find the fragrance of fruit. It is surely no accident that reporters at fruit-shows almost invariably express their feelings in the set phrase: „The sight of the fruit makes one's mouth water." I may remark that the various grains also possess an agreeable, if faint, odour and have also a pleasant taste, even in the raw state. There is nothing repulsive to us in harvesting and in cooking grain; and not without reason has the countryman been called a happy and contented rustic. Thus, for the third time, we must draw the conclusion: "By nature man is decidedly a frugivorous animal."

In examining, on our fourth excursion, the arrangements made by Nature for the propagation of the species,

the observations are more difficult. All animals, on their entrance into life, are provided with a food which favours their rapid development. For new-born babes the mother's milk is undoubtedly the only natural food. And here we observe that a great many mothers are quite incapable of performing their sacred duties, their organism not being in a condition to produce the nutrition for the child. This is especially deplorable, because such children are thus deprived at the very commencement of their life of the natural standard for sensuous impressions, no artificial food resembling the natural one in every respect. Observation shows us that the mothers of the so-called "better classes," whose chief nourishment is flesh-meat, suffer most in this respect, and are obliged to employ wet-nurses from the country, where very little flesh-meat is eaten. As a rule, such nurses on securing a situation, then live on the same food as the other inmates of the town house, and as a consequence not seldom lose the ability to suckle the child. On voyages, oat-meal gruel is given to nursing mothers; for on the diet usually supplied on board ship, consisting at it does largely of flesh-diet, their breasts would soon dry up.

From these observations we draw the conclusion, that flesh-diet affords little or no aid in the production of the mother's milk.*

Thus, for the fourth time, we are forced to the conclusion that man is naturally a frugivorous animal.

If our conclusion be correct, it necessarily follows that the greater part of mankind has wandered more or less from a natural diet. Creatures of Nature have turned aside from their natural food! That sounds monstrous, and needs

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* We do not mean to say, that on a vegetarian diet every mother could nurse her own child; for this, a certain degree of health is also requisite, which cannot be attained all at once.

still further proofs. Is it possible, then, that other creatures can likewise forsake their natural food; and what consequences would this have? This question must be answered before we can proceed.

We are well aware that dogs and cats can be accustomed to *vegetable* diet; but can we also adduce instances of vegetable feeding animals having become accustomed to flesh diet? I was once enabled to observe an extremely interesting case. A family reared a young deer, wich soon made friends with the house-dog. She often saw the latter lapping meat-broth, and soon attempted to take her share at meal-times. At first, she always turned away with signs of disgust at the mere taste of the broth; but she repeated the attempts, and in a few weeks ate her share with relish. In a few weeks more she could even eat fleshmeat, which she at length preferred to her natural food. But the effects were soon observable; the animal became ill and died before it was a year old. I may add that this deer was not confined, but ran about at will in the garden and woods.

We know, too, that the frugivorous apes can be easily habituated in confinement to a flesh diet, but then, as a rule, die of consumption within a year or two. This is usually attributed to the climate, but as the other denizens of the tropics thrive quite well in our zone, we are justified in assuming that it is the unnatural food which is principally to blame. Recent investigations also confirm this view.

It is, therefore, certain that animals may turn from their natural food; and thus the assumption that a great part of mankind has done the same, becomes still more probable. But if this be the case, the consequences must also be perceptible to us—diseases must surely appear, or have already appeared.

Should we ask in sober truth, how many persons have

never required a physician, I believe we should find very few indeed. And how many are there who really die of old age? The cases are so rare, that the newspapers usually record them. There are extremely few persons to be found who are not encumbered with foreign matter. In general, the more frugivorous country-folk, though not living strictly in accordance with Nature, are more fortunate in that respect; and though fresh aire may play its part, food is here the prime factor. Although it is certain, that the unsatisfactory condition of our health is partly the result of other causes, we can ascertain by a comparison with the animal kingdom, that food is the most important cause. For instance, animals kept in the stable live in the most unfavourable hygienic conditions imaginable; they are forced to breathe continually the gases issuing from their excrements, and are almost wholly deprived of free exercise. They must naturally become diseased in consequence, and one can take it for granted, that such cattle are never quite healthy. But despite these unfavorable hygienic conditions, there are not so many diseases prevalent amongst these animals as amongst men, who in all these respects can and do take much better care of themselves. The blame, therefore, must be laid chiefly on the food consumed.

We have now proceeded far enough to take a last step, and prove by *experiment* the tenableness or untenableness of our conclusions. Two objektions which are often raised, we can examine at the same time. The first is, that man, in consequence of his higher organization, is not subject to the same conditions as the creatures standing on a lower level. And the second objection is, that through long observance of a flesh diet, the human system has perhaps adjusted itself to the new diet in accordance with the Darwinian theory of adaptation. This second objection is again divided into two parts: firstly that the *whole human race* has undergone this process of adaptation; and secondly,

that *adults*, at least, could not without danger abandon the diet to which they have become accustomed.

All these questions can be finally settled only by experiments, undertaken both with children and adults. And many such experiments have already been made, the results of which I shall here briefly sum up. In a number of families children have been brought up from birth without flesh-meat, and I have made a special point of watching their development. I can confidently assert, that the experiments have resulted decidedly in favour of a *natural* diet, *i. e.* a diet from which flesh is excluded. The children develop admirably both physically and mentally, whether as regards understanding, will or temper.

This leads me to a few special remarks on education as regards morality. This question has become a burning one, lamentations over the immorality of youth being a matter of every-day discussion. Now, what is the worst enemy of morality? Ask the clergy of all religions, ask philosophers and teachers of ethics, and you will always get the same answer: "The sensual passions." Extraordinary trouble has been taken to suppress the passions, dut for the most part by means of unnatural remedies, such as excessive fasting, scourging, monastic confinement, etc., of course, therefore without much effect. But just as a general can conquer the enemy most quickly and surely, by preventing him from drawing up his army in order of battle, so it is with the educator. If he can succeed in preventing the development of the sensual passions, the arch-enemy of morality is overcome; one chief means to this end is the nourishment of children on an unstimulating, natural diet. Experiments have proved the correctness of these statements, and the fact is of such high importance, that it cannot be sufficiently emphasized.

Freedom from sensual passions, and the peace of mind thereby obtained, likewise form a sure foundation for an

excellent intellectual training. Every psychologist knows, that a state of contentment is by far the most favourable to mental activity, to clear thinking and sound judgement; and this can hardly be attained in any way so successfully as by a vegetarian diet.

Though I would willingly pursue this theme further, I regret that I must break off here, for fear of trespassing too long on your attention. We must, however, still just consider the many experiments which have been made with grown persons, we advocates of the natural system of living standing before you as examples. What results we have attained, can be most readily gathered from the fact that we have become, and remain, faithful adherents of this mode of living. I would here remark that you must not forget that most vegetarians have been driven to adopt their diet by serious illness. While they themselves, therefore, are glad that they have been able to regain tolerable health by this means, one cannot, of course, expect all of them to be strong and ruddy complexioned; many attain to such health, others do not. For instance, take the case of Theodor Hahn, who at the age of 29 was on the verge of the grave, and his recovery held to be impossible by the doctors. By the aid of a natural diet he attained fair health, and was enabled to live 30 years longer. The experiment assuredly resulted in favour of the fleshless diet, so that it really seems strange that our opponents should cry out triumphantly: "You see he only lived to be 59 years of age!"

The New Science of Healing without Drugs and without Operations has proved the unstimulating diet to be the natural one, and absolutely essential for any thorough cure. Experience, too, has proved that the cure always goes on more rapidly if a strictly unstimulating diet is followed. Those who cannot make up their minds to forsake the flesh-pots and give up spirituous drinks, greatly retard their

recovery; since they are continually conveying new foreign matter into their systems, which has to be again expelled. The disposition to disease is therefore never got rid of.

Persons who are tolerably well, are better in a position to tax their bodies with such additional work, although it is always to their own disadvantage. He who would regain health, however, requires all his physical energy for expelling the morbid matter; and this strength, as experience shows, is only to be obtained from an unstimulating system of diet. The prevailing mixed diet is sufficient to explain to us why sickness and sickliness are to be met at every turn.

But now you will ask for details as to exactly what to eat and drink. With reference to beverages, I must return once more to our field of observation. Except man, we find no animal that naturally chooses any fluid other than water to allay its thirst. And it is worth noticing that animals nearly always seek out flowing water, and prefer to drink from rivers or brooks, rather than from springs gushing from the rocks; which accords with the proved fact that water which has been exposed to the rays of the sun, and flowed over gravel, is preferable to fresh spring-water. Moreover, animals which feed on succulent food, drink very little, and man himself is seldom thirsty if he does not neglect juicy fruits in his diet. But when he does need drink, water is for him, too, the only natural beverage. Even fruit-juices mingled with the water, may easily occasion him to drink more copiously than necessary, at least when they contain a large admixture of sugar. If we would be cured of disease, we must keep strictly to the beverage intended for us by Nature, and must quench our thirst with water only.

But what are we to eat?

Nature points to fruits; and a fruit diet is, therefore, the best. All fruits and grains, all berries, and roots which are attractive to the senses of sight, smell and taste, may

serve us for food. We find such in abundance in all regions and zones of the earth, except perhaps in the coldest. The latter are, therefore, not suited to be the home of man, and we find their inhabitants physically stunted and mentally but little developed.

As far as possible, the gifts of Nature should be consumed in their natural form. This, of course, is often not practicable, on account of our degenerated condition of health, especially as regards the teeth. As a rule, however, we do well to avoid, whenever possible, all artificial condiments and extracts, all concentrated food being unnatural. Nature never offers us such. The addition of sharp spices, and if possible, of sugar and salt, is also to be avoided.

Food is now-a-days often cooked very improperly; for instance, the water used in boiling, which absorbs a great deal of nutritious matter, is usually poured away, and the washed out vegetables then brought to the table. This is altogether wrong. All vegetables ought to be cooked in as little water as possible, or in a steamer and the water left on them. Regarding the manner of preparing the various dishes, I must beg you to consult some of the many vegetarian cookery-books; I may mention that issued by Ed. Baltzer (1 s. 6 d.). (See advertisement at end of this work.)

But it would be a mistake to suppose that every dish there described is to be recommended for sick persons. One cannot perform one's regular work with an injured arm, neither can a debilitated stomach digest in a normal manner. It speaks best itself as to what it can digest. As soon as eructations, or pain in the stomach, or wind, or a sour taste, or any other irregularity is experienced, it is a proof that we have either eaten too much, or have eaten something unsuitable. The patient will soon find out what is good for him, if he observes carefully. The best thing in most cases at first will be wholemeal bread, if carefully and thoroughly

chewed. If this cannot be digested, unbolted wheatmeal can be eaten with good results, for this admits of being swallowed only when thoroughly insalivated, so that the patient runs no great risk of eating too much. Great moderation in eating, as well as the choice of suitable food, is of the utmost importance to the patient. Even the most suitable sick-diet is injurious if the patient eats too freely.

For the sick, oatmeal gruel is a most suitable food. It should be made thick with no addition, unless a little salt and fresh unboiled milk. Milk should never be taken other than cold and unboiled. First see, however, whether it is unpleasant to the smell, or taste, in which case it is unsuited for food. Do not imagine that it can be improved by boiling; boiled milk is much more difficult to digest, because it ferments more slowly and the unhealthy constituents are not expelled by the boiling, but still remain in the milk. It has consequently little nutritive value, and at most tends to render the body stout, without strengthening it. Fresh fruit may be eaten at meal times. In order to afford some variety, although this is not exactly essential, we may mention further rice, barley, etc., to which a relish can best be given by adding green vegetables, *e. g.* cauliflower and asparagus or stewed fruit. A great abundance of articles of food is at the command of all healthy, or comparatively healthy, persons. A glance at one of the above-named cookery-books will convince anyone that he will not have to suffer from want of food.

To prevent all misunderstanding, I would again call attention to the fact, that a person seriously ill, in particular one suffering from severe indigestion, should eat only the very simplest food, and only such as must be thoroughly chewed. The best diet for such a patient is whole wheatmeal bread and fruit; no attention being paid to the palate until improvement has set in.

But does it taste good? I hear some ask. Whence comes pleasure in eating? It is called forth by the stimulus exerted by the food on the gustatory nerves. This stimulus is compared with others to which we are accustomed, and it pleases us in the measure it corresponds with them. By way of exception it may be somewhat enhanced, and then affords us super-pleasure. But should this be oft repeated, we grow used to it, and are then no longer able to experience the increased degree of satisfaction. Thus, as soon as we become accustomed to exquisite pleasures, they afford us as much, but no more enjoyment than the earlier ones, which were less refined and costly; and these latter have the advantage of there being no need to overstimulate the nerves, in order to obtain a pleasing sensation.

And shall I again remind you of the consequences alluded to at the beginning? It was unnatural food which encumbered man with foreign matter; a natural diet does not convey such into the system, or at least only in those cases where it cannot be properly digested; or where moderation in eating is neglected. If we are able to get rid of the morbid matter, a natural diet affords us a guarantee that we can remain healthy, provided we do not altogether neglect the other conditions of health.

May the many blessings, then, which a natural manner of living confer upon the individual, the family, the entire nation, soon become known everywhere, throughout the land!

Directions for Preparing Good Wholemeal Bread.

As followed by Louis Kuhne since 1868.

Put 3 lbs. of unbolted wheatmeal, or of unbolted flour of any other grain (in tropical regions, maize with wheatmeal or rice, etc.), in a dish, pour over it about 1½ pints of cold water and mix thoroughly. Cold water is to be

preferred to warm, as experience shows that warm water sets the bread in fermentation more readily than cold, and though this may render the bread somewhat lighter, it will be less nutritious and pleasant to the taste.

Now divide the dough into two equal parts, forming each into a long shaped loaf; lay them upon dry tiles (not bricks) sprinkled with wholemeal, wet the loaves well on the top with water, and place each with its tile upon an empty flower-pot in a quick oven.*

No other articles, or dishes, should stand in the oven at the same time.

The heat in the oven must be kept up by a steady fire.

After half an hour, during which the oven must not be opened, turn the front side of the loaves to the back.

After another quarter of an hour, see whether the upper crust is well and firmly baked, and then turn the loaves over, as they are usually still soft on the bottom.

The loaves must now bake until they sound quite hollow when tapped in the middle with the finger; this usually takes half an hour longer.

One may then feel sure that the bread is well baked and the crust not too hard.

Directions for Preparing Wholemeal Gruel.

For one plate of gruel, stir a heaped tablespoonful of wholemeal into a thin paste with a little water. Pour this into boiling water, and let it boil some minutes, stirring continually. Salt and butter should be added very sparingly,

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* I have recently constructed a small **bread baking apparatus** (see advertisement at end of this work) suitable for those who have no appropriate oven. With this apparatus a single person can bake wholemeal bread for private cousumption. The heating is effected by means of a spirit-lamp, as is used for the steam-pots of my steam-bathing apparatus. Bread can be baked in this new apparatus in about $^3/_4$ hour, and is of excellent quality.

or not at all. This gruel also tastes very good, when sprinkled over with currants.

Hints for the Proper Selection of a Natural Diet.

Breakfast: Wholemeal bread and fruit; or wholemeal gruel with bread; or oatmeal porridge with fruit and bread. Milk only unboiled.

Dinner: If soup, it should be thick; or cereals, served as thick porridges, such as rice, barley, groats, oatmeal, made only with water and a little butter, or perhaps with the addition of a little fruit; or pulse, such as peas, beans, lentils, boiled thick with water only, and not mashed, seasoned with marjoram or pepper-wort if liked; or any vegetable that the region affords, and that is in season; or stewed or fresh fruit, with wholemeal bread.

Supper: Wholemeal bread and fruit (fresh or stewed); or a gruel of flour or wholemeal, boiled thick, with bread or fruit.

Some Simple Receipts.

Red Cabbage and Apples. A large head of red cabbage is cut into shreds and steamed with about half a cupful of water until half soft. Then add 4 to 6 sour apples, cut into thin slices, with a little salt and butter, and steam until all the moisture is absorbed. (Also tastes very good without the salt and butter.) For three persons.

White Cabbage and Tomatoes. A head of white cabbage is cut and steamed as above, then add about half a cupful of tomato-extract—or from 4 to 10 (according to size) fresh tomatoes passed through a sieve—with a little salt and butter; lay 6 to 8 raw, peeled potatoes, simply cut in half, on the top, and without stirring, well steam the whole. (Also tastes very good without the salt and butter.) Pepper-wort may be used instead of tomatoes. For three persons.

Spinach and Potatoes. Spinach after being gathered should be twice washed, chopped (in the raw state) and steamed soft with very little water, a small quantity of salt and butter and some raw potatoes. Should any liquid remain, add a tablespoonful of wholemeal.

Cabbage and Groats. The cabbage is pulled into small pieces, washed and boiled with about 2 cupfuls of water. When pretty soft, add a little salt and butter and $^1/_2$ a cupful of groats; stir and boil until the groats are soft.

Carrots and Potatoes. Cut 5 to 8 carrots (according to size) into long strips, and steam in about a cupful of water. Then lay on the top 6 to 8 raw, peeled potatoes, cut in half, and cook, with a little salt and butter. (Also tastes good without the salt and butter.) For three persons.

Turnips and Potatoes. Slice some large turnips, and steam in 1 to $1^1/_2$ cupfuls of water until half soft; add a little salt and butter and 6 to 8 raw, peeled potatoes and steam thoroughly. Also tastes very good without the salt and butter.) For three persons. This and the last dish may be cooked together; they taste excellent so.

Rice and Apples. $^1/_2$ lb. rice, and 4 to 8 apples cut in slices, with 4 cupfuls of water, boil slowly to a stiff porridge. Very tasty. A little salt and butter may be added, but it is not necessary. For three persons.

Simple Rice Pudding. To the above rice porridge, add $^1/_4$ lb. currants and bake in a dish buttered and dusted over with bread crumbs.

Haricots and Tomatoes. $^1/_2$ lb. haricots are placed the evening before in cold water, and then in the morning boiled with sufficient water added to cover them. When soft, add about half a cupful of tomato-extract, or 5 to 10 fresh tomatoes passed through a sieve, add a little salt and butter, if desired. It is best after adding the tomato sauce, to keep the dish standing warm for 1 to 2 hours. If there should be liquid remaining, then add a spoonful of whole-

meal to thicken it. Pepper-wort or marjoram may be used in place of tomatoes. Quite sufficient for two persons.

Green Beans and Apples. Cut the thread soff the beans and break each bean into pieces; put in boiling water and then add sour or unripe apples cut in slices chopped parsley or onions and a little salt and butter then added. When the beans are soft, a little wholemeal should be added as thickening.

Lentils and Prunes. Soak $^1/_2$ lb. lentils the evening before, and then boil soft over a slow fire, with about 30 prunes and sufficient water to cover them. A little salt and butter may be added if desired. For three persons.

Mushrooms and Potatoes. The mushrooms are well washed, and steamed soft with chopped parsley or onions. A little salt and butter is then added, and the liquid thickened to a sauce with two tablespoonfuls of wholemeal. Potatoes boiled in their skins, are then peeled, cut in pieces, and added to mushrooms in the sauce. The whole is then again boiled and finally kept standing warm for some time.

Beetroot salad. The beetroot is washed and baked soft on a tile in the oven. Then peeled, cut in slices and served with diluted lemon juice.

Lettuce. Wash the lettuce and prepare with a little oil, lemon juice (not essence), and a little sugar.

Potato and Apple-Salad. Potatoes well boiled in their skins are peeled and cut in slices. A few sour apples are likewise sliced, and both stirred together with a little oil and lemon juice.

Peas and Lentils in the most digestible form. Unshelled dried peas or lentils are soaked the evening before in cold, and if possible *soft* water. The next morning put in a pot with only enough water to cover them. A little salt (very little), peppor-wort and marjoram may be added. Boil the pulse well, but so that when done, all,

or nearly all, the water is absorbed. The peas or lentils thus keep their original form and are more nutritious and easier of digestion than when mashed up or served with butter.

Potato dumplings. (For two persons). Well boil a quart of mealy potatoes. Then peel and cool, and rub through a grater. Cut some bread into dice and fry in butter. Well mix these with an egg, the greated potatoes and a little wholemeal or flour, and with the hand form them into balls about the size of an apple. Then roll them in wholemeal or flour, and put in boiling water for about 10 minutes. Care must be taken that they do not become sodden. They may be eaten with any fruit, onion, or butter sauce.

Part II.

Nervous and Mental Diseases. Sleeplessness.

THE doctrine of the unity of diseases applies also to nervous and mental disorders. The nineteenth century has rightly been called the century of nervous diseases, for the are now to be found everywhere in a myriad forms. Infinite pains are taken to give correct names to all the new diseases, and to determine their nature and cause, with a view to deciding upon some, at all events approximate, system of treating them.

Nervousness, *Neurasthenia*, *Neuralgia*, *Hypochondria*, *Hysteria*, *Insanity*, *Imbecility* and *Paralysis* are diseases known everywhere, not to mention other similar disorders having the same cause.

With the increase of these serious nervous complaints, new external forms are always making their appearance. But such external forms offer no definite clue to a right understanding of the nature of the diseases. If, however, we examine the condition of nervous patients we always find signs of some internal, disquiet or uneasiness. The patient has always a certain unconscious, indefinable feeling of disease, without knowing the cause, and without confessing to the disorder itself.

We find one person excessively talkative, while another is quiet and tacitur. Many suffer much from sleeplessness; others exhibit restless activity, and others again are remarkable for their unconquerable laziness. One will go about with the fixed idea of suicide, because he thinks himself superfluous, and is dissatisfied with the whole world. There we see a millionaire daily tormented by groundless fears for the future that never desert him. Others are always trembling all over. Some lose the use of, it may be a limb, one side, or of the whole body. And then there are the most diverse and often contradictory symptoms of insanity, one of the worst of which is paralysis. We see, moreover, that these diseases prevent people, more or less, from exercising their faculties. One loses the mastery over his limbs, another is no longer master of his thoughts, his will, or his words. Were we to observe thousands of nervous patients, we should find scarcely two in whom the outward symptoms were exactly alike, so various are the form that these diseases take. No one need be surprised, therefore, that amid so many conflicting symptoms, the medical profession has found no sufficient basis to go upon as regards clear understanding, nomenclature and cure of nervous diseases. Drugs have produced neither improvement, nor cure, in these nervous cases, even if temporary paralysing of the nerves is sometimes attained.

It is quite an error to imagine that the drugs themselves ever effect any result. It is really wholly and solely the system, which seeks to get rid of the injurious matter either with increased or diminished activity.

In one case there are clear signs of increased activity of the system, with a view to forcible expulsion of the poison. This occurs when the medicine is given in such small doses, that it cannot have a paralysing effect on the system. In the case of larger (allopathic) doses of poisonous drugs, traces of paralysis are clearly to be observed. At

the same time, the efforts of the body to regain health (acute diseases) and the outward symptoms of the chronic complaint are likewise paralysed. This circumstance explains the temporary disappearance and regular recurrence of symptoms under allopathic treatment. At first they are suppressed by the nerves being paralysed; but when the body recovers a little they reappear. Strong medicinal poisons in large doses paralyse the body to such an extent that death ensues. In the case of lesser doses, this paralysis may not cause death, but at any rate it injures the entire system.

It may confidently be asserted that many nervous disorders are really caused by the employment of drugs, which have at first been administered to cure some less serious complaint. In very small doses, the effect on the body is apparently just the contrary to paralysis, for instead of being paralysed, the body makes redoubled efforts to free itself of the poison. The increased activity, however, is only a preparatory stage to paralysis, and can never be anything else.

As for the cure of nervous diseases, it cannot be denied that the much lauded medical profession stands utterly helpless. Indeed, its representatives have frequently confessed their total inability to aid in such cases. Change of air, diversion by travel, and like harmless measures of relief are recommended. But even if temporary relief is thus attained, we still plainly see by such advice, how little medical men know of the cause and nature of nervous diseases. That which is impossible for the orthodox medical school, that which has puzzled the brains of its representatives, has been effected and clearly explained by the New Science of Healing. My reports of cures, and the accompanying letters of thanks and testimonials from a small number of my many patients, speak more plainly and convincingly than all scientific and theoretical expositions.

I may be permitted, therefore, to limit myself here to some of the chief points of importance in connection with these disorders.

As is well known, we posses two kinds of nerves: firstly, nerves which are controlled by the will; and secondly, nerves which are independent of the will, and which regulate the functions of breathing, digestion and circulation. But when I assert that all diseases arising from the encumbrance of the system with foreign matter, are also nervous diseases, many may at first be surprised. The matter is easily explained. We first become conscious of a disease when it interferes with the normal functions of the body, or occasions pain. This implies, naturally a more or less advanced stage of the disease, which nevertheless the Science of Facial Expression enables us to accurately diagnose. We know, also, that disease without the presence of foreign matter in the body is impossible. Every encumbrance of the system with foreign matter not only exercises a disturbing influence on the individual organs, but disturbs equally the nerves which are in connection with these organs or parts of the body, or which regulate their functions. And it is not until the nerve-connections are also affected, that we become aware of the disease. The superficial observer regards merely those nerves which are under the control of the will, and those diseases which affect organs under the regular control of these voluntary nerves.

Those disorders which interfere with the breathing, circulation and digestion, make their appearance much more gradually. Here again, the nerves likewise become affected and make us aware of the disorder. These nerves are not under the direct control of the will, but upon their normal activity depends that of the organs which are not controlled by the will, such as the lungs, heart, stomach, kidneys, intestines and bladder. We can never become aware of any digestive trouble, or of any disease of the kidneys, bladder, heart, lungs or stomach, before the nerves associated

with them are likewise so encumbered by foreign matter that their activity is no longer normal. Each of the above-named diseases, therefore, always implies simultaneous nervous disorder; thus one can never suffer from disordered digestion, without, at the same time, suffering from a disordered condition of the nerves regulating the process.

As I have already stated, a normal digestion is the first condition to obtain a healthy body. For all foreign matter not hereditary, is first brought into the system by imperfect digestion. Every disease, and consequently all nervous diseases, therefore either result from a disordered digestion, or are inherited. This is the common cause of all diseases whatever. When the system still has sufficient vital power left, it makes an effort to expel the foreign matter by an acute disease (curative crisis). When, however, the requisite vital power fails, those chronic (latent) cases of disease appear. Such diseases never cease, they at most change their form, and finally reach their highest development in those sad nervous and mental disorders. Nervous diseases are simply chronic (latent) physical disorders, whatever their symptoms may be.

In nervous diseases, as in all diseases, we notice as a particular symptom, either a feeling of chilliness or of increased warmth (heat), which are both the results of a feverish state of the body.

We thus arrive at a conclusion of great importance: that nervous diseases, also, simply indicate chronic (latent) fever. If I thus assert, that nervous disorders have the same cause as small-pox, measles, scarlet-fever, diphtheria, syphilis and so on, it follows that the same remedy with which these diseases can be successfully treated, must also cure nervous diseases. And this is a fact which I have proved in my practice in hundreds and thousands of cases, as the testimonials at the end of this work show.

From these elucidations, we thus gain a definite idea concerning the nature, origin, and cure of all nervous diseases. No longer helplessly looking on, like the orthodox practitioners, having learned the cause, we know exactly how to render effectual aid.

Whoever now surveys the great army of diseases from my point of view, will readily perceive that only he who comprehends the true nature of symptoms will be in a position to give practical advice as to a cure. It is just as with an army, which can only be properly led by a general thoroughly acquainted with the troops composing it. The leader who is ignorant of the forces of which his army is made up, will inevitably suffer defeat. Similarly it is, with latter-day specialism. *Specialism in medical science must necessarily lead to the ruin of the science* and to an ever-growing contempt for it. For how can a specialist serve science, if he neglects the natural laws governing the human organism, and treats a part without regarding the whole?

All specialism in medical science appears to us to be a step backwards, a superfluity, a factor isolated from the whole and serving only to obscure our vision. Only he who has a true comprehension of the whole, only he who regards Nature as a grand indivisible unity, is in a position to rightly interpret all the phenomena he sees, and profit by the laws which control them. How often Nature exhibits to us the same material in the most various and dissimilar forms, all being controlled simply by temperature. I need only remind you again of water, which we see in various forms: as fluid, as mist, as steam, as cloud. Temperature alone conditions this; the material is one and the same in each case.

As for the *diagnosis* of nervous diseases, medical science is quite as much at a loss here as at is concerning their cure. In many cases the doctors even fail altogether

to recognize nervous diseases at all. How many nervous patients have consulted me after having tried everywhere else. All such persons are living proofs of the incompetence of the medical profession in this direction. Many of these patients had been declared perfectly healthy by orthodox physicians, who pronounced their disease to be merely imaginary, whilst I, by means of my Science of Facial Expression, could immediately ascertain the serious encumbrance of the patient with foreign matter. All my nervous patients have remarked the astonishingly rapid improvement in their condition effected by my treatment, and how this change for the better was always in proportion to the amount of morbid matter secreted. Whoever has once taken note of these secretions, and experienced the steady improvement of his condition, can no longer doubt for an instant the accuracy of my system of diagnosis and success of my method of cure.

My system of diagnosis assures the representatives of my method, once and for all, a favoured position as practitioners of the art of healing. By its means alone is it possible to diagnose with certainty every nervous disorder, to observe even the gradual development of such disorders, years before the patient himself has any idea whatever of their existence. Enbumbrance of the back, in particular, is a sign of a nervous disorder, as is explained in my handbook of the Science of Facial Expression.*

Mental Diseases. The same obtains in the case of all mental diseases. Their true nature is likewise wholly misunderstood by medical men. It is not the causes usually described, that lead to a bewilderment of the brain, but

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* See **"The Science of Facial Expression"**, by *Louis Kuhne.* A hand-book of a new system of examination to ascertain the state of the disease, based upon original researches and discoveries. Fully illustrated. Price of the English edition, paper-cover 10 s., elegantly bound 11 s. Louis Kuhne, 24 Flossplatz, Leipsic.

simply and solely the encumbrance of the system with morbid matter, which has been accumulating for years. In mental disease and so-called progressive paralysis, the final and often incurable stage is reached. These slowly accumulating latent encumbrances are caused, as I have said before, by a very gradual debilitation of the digestive powers, in consequence of an unnatural mode of life. Naturally, since all persons do not live equally unnatural lives, everyone is not found to suffer from mental disorder. It depends upon the degree and development of the encumbrance. Mental disease occurs only where the body is seriously encumbered, and then only when with back encumbrance the head is attacked. Advancing civilisation is to blame for the increase in mental diseases only in so far as it brings with it the necessity for men to break Nature's rules, and to act in opposition to her immutable laws. The chief blame lies with the orthodox medical school, whose rules of health and views generally, are absolutely contradictory to what Nature teaches. Water is avoided as injurious to health, and beer, wine and other alcoholic drinks, or mineral waters are drunk instead. Men smoke so constantly that they might be chimneys, and drink so much that they might be taken for beer-barrels. Physical debility and languor is the natural consequence. No wonder, if the weakened nerves have always to be strengthened by stimulants. Stuffy rooms and over crowded factories also play havoc with the health.

In the country, where the population still lives more or less closely in accordance with Nature, and works regularly in the open air, and where the rules of health laid down by the modern school of medicine have not yet found general introduction, mental disease is as good as unknown. If met with, it is only in the children of habitual drunkards Such a child suffers from heriditary encumbrance, which leads to mental disorder or some other serious disease,

children always being faithful copies of their parents' physical constitution.

Alcoholic drinks impose such a digestive task upon the system, that no strength remains for any other activity. This explains the excessive weariness and often preternatural sleepiness experienced by drunkards, since their stomachs have to undertake an abnormal digestive work. The pressure on the brain, exercised by the gases developed during the progress of this digestive fermentation causes the mental disorders of heavy drinkers. A child begotten while the father is in a state of intoxication, or even semi-intoxication, will nearly always be found to incline to insanity, if it does not, indeed, die before it has time to reach such a state.

Any mental disorder, whether resulting from an inherited or an acquired encumbrance of foreign matter, is always caused by an abnormal digestion; and therefore originates, like all other diseases in the abdomen.

The more simply and naturally man lives, the healthier and happier will he be. This explains why the negroes, when slavery still existed and they were consequently forced to live frugally and industriously, were exempt from mental disease; whereas now, as free men, with the advantage of a higher standard of living, they are subject to all the results ensuing from imbibing the poison of civilisation.

It is well known that mental disease is much less common amongst females than amongst males. The reason for this is doubtless the fact that women, in general, live more moderately than men, especially as regards the consumption of tobacco and alcohol. In those cases where we find a woman suffering from insanity, the disease can nearly always be traced back to an interited encumbrance.

It is observed in many cases of mental disorder, that the disease is preceded, or accompanied, by increased physical and mental activity, a circumstance which our

orthodox specialists are altogether unable to explain. The gradual encumbrance of the body, and of the brain in-particular, with morbid matter, exerts a steadily increasing, pressure on the brain, and thus on the nerve centres, culminating, in the course of years, in abnormally increased activity of these organs. This manifests itself very variously, as already pointed out in the case of nervous diseases. Body and mind hasten from one work to another without rest, never able anywhere to find peace or contentment. This abnormal condition frequently appears as a special talent during childhood, the change to the other extreme not occurring until manhood. Infant prodigies seldom show marked abilities in later life.

One cause of mental disorders is a back encumbrance by which the chief nerves of the abdomen, the special cord, and the *nervus sympathicus*, are seriously affected, unless the system can expel the morbid matter by means of an acute illness. Through the latent fever, a chronically diseased condition may be brought about, which reaches its climax in a disorder of the mind. In acute diseases, mental disorders often suddenly appear and disappear, according to the amount of pressure exerted internally by the morbid matter. On the other hand, in many cases of insanity, more or less extended periods of complete mental lucidity have been odserved, the pressure of the morbid matter having relaxed for the time being. As soon, however, as the pressure of the morbid matter becomes more intense again, the temporary state of mental clearness disappears.

Progressive Paralysis is nothing but an advanced stage of mental disease. When we hear the medical profession assuring us that those who fall victims to progressive paralysis are frequently the healthiest and strongest persons, it simply proves how little orthodox medical men know of real health. *We* know better than this; we know that a serious disease like progressive paralysis cannot come on

so suddenly, but that its preliminary stages are observable long before to an expert in the Science of Facial Expression. We, therefore, know that it is absurd to assert that the healthiest men can all at once become mentally diseased.

Mental diseases can only be cured by expelling the morbid matter which is the cause of them. In my practice numerous cases of insanity have been cured by this method. ample proof being thus afforded of the correctness of my assertions. I will here mention one such case.

A girl of 23 who had been afflicted for several years with total insanity, was brought to me by her parents to whom she was a constant source of anxiety. The position of the encumbrance being favourable, I could with a good conscience advise the parents at all events to make an attempt with my method. The condition of the patient was such that she could not even bathe herself, her mother having to do it for her. In four weeks, however, she was so far improved that she could take the baths herself, and was no longer uncleanly in her habits. Within half a year she could again be reckoned among the healthy members of the family.

This surprisingly rapid cure was possible only because the position of the encumbrance was fairly favourably situated, in consequence of which the digestion could be improved comparatively quickly. The cure was the easier, also, as the patient did not rave, but was, on the contrary, apathetic and given to brooding.

In those cases, however, where the position of the encumbrance is less favourable, or where the patient's condition renders treatment according to my method impossible, the disease can hardly be regarded as curable at all. For instance, I have often seen cases where the patient could in no way be induced to take a bath. Mental disorder is, generally speaking, like consumption, a final stage of disease, so that the principal hope lies in attacking the

disorder as long as there is yet time. Formerly this was impossible, the correct way to proceed being unknown, and the disease being first discovered when it was already too late to effect a cure. To-day, however, in my Science of Facial Expression, we possess an infallible means of observing the advance of mental disease years beforehand, so that we are in a position to combat it with certain success.

Most mental diseases are held to be incurable to-day, but the opinion is altogether contrary to fact. In proof of this, I will here report the following cure.

The case was one of severe progressive paralysis following upon syphilis. The patient had for many years been suffering from a weak digestion, which in consequence of mental excitement, due to business anxieties, became always worse and worse, in spite of every manner of treatment. In July 1897 the sufferer, at the advice of several physicians, visited a spa to drink the mineral waters. These had such a bad effect, that his condition grew still more serious. His speech became affected and he no longer understood what he was talking about. Four of the most eminent physicians were sent for, and after a long consultation advised anointing with mercury (which, however, was only twice applied). The patient's condition finally became so bad, that when the physician put a question to him he could only repeat it, but not give an answer. All hope of recovery in this way being given up, the patient was nex taken to Vienna, in order to consult a famous specialist there. The diagnosis showed that the patient was suffering from *atrophia cerebri* (atrophy of the brain) of luetic origin, *paralysis progressiva,* and would have to be confined in a lunatic asylum before long. An improvement, in this physician's opinion, was no longer to be hoped for, nevertheless he prescribed potions of iodine (which advice was not followed). At the recommendation of a friend, the relatives now travelled with the

patient direct to Leipsic, in order to make, as a "last attempt", a trial of my method. At the commencement of the cure the patient dit not speak a word; he was quite apathetical and paid no attention to the questions put to him. Moreover, he was no longer able to satisfy his natural needs like a human being, for the body was wholly without volition. As a result of the cooling baths and simple natural diet, an improvement was soon noticeable, and in three days the digestion had improved. In a week the patient had recovered the use of his lost sense and could converse again. Improvement now went on regularly, so that in 8 weeks he was cómpletely cured, every trace of progressive paralysis having vanished.

These two cases again, afford a stricking proof of the doctrine of the unity of disease. Did not mental disorders have the same origin as the other diseases already dealt with, it would not be possible to cure them, as here was the case, by the same means that proved so successful in the case of the other diseases.

Pulmonary Affections. Inflammation of the Lungs, Tuberculosis. Pleurisy. Lupus.

ANOTHER disease which sadly puzzles the medical profession, defying all the attempted cures, is pulmonary phthisis, or consumption. This is the great destroying angel of the present, which terrifies all mankind, demanding its victims irrespective of age and occupation.

Probably no other disease is so widely spread as pulmonary consumption in all its various forms and stages. The external symptoms of this dreaded disease vary so greatly that they are seldom the same in any two patients. One complains of *difficulty in breathing, asthma;* another of *headache;* a third of bad digestion; a fourth notices nothing at all until, a fortnight before his death, he is suddenly seized with inflammation of the lungs. A fifth also notices nothing, until he is all at once attacked by *galloping consumption,* and dies within a few days. A sixth suffers, as he believes, from caries, whilst in reality his complaint is tuberculosis. Many persons whose lungs are affected, get pains in the shoulders, while others suffer from a *disease of the eyes or ears,* which conceals the real cause. Often it is *disease of the throat, pharyngeal catarrh, bronchial catarrh, chronic nasal catarrh,* etc., which are traceable to consumption. Others again have a chronic *foot disease, open sores on the feet and legs;* while we find also *lupus* and *herpes,* which

likewise deceive anyone not proficient in my Science of Facial Expression as to the true seat of the illness.

It is characteristic of nearly all consumptive persons that they keep their mouths more or less open* not only by day, but also at night when asleep, for the purpose of quicker respiration. The reason of this is excessive internal bodily heat, which demands a more rapid supply of cool air from outside.

It is the function of the lungs constantly to purify the blood circulating in the body, by the agency of fresh air. When they cannot properly perform this function, in consequence of their being encumbered with foreign matter, all the waste material which would otherwise have been expelled, remains in the system, continually increasing in quantity, and augmenting the amount of morbid matter already there. The lungs are the organs chiefly here concerned and they therefore suffer most. The consequence is, that the condition of the blood becomes altogether abnormal, causing a dry devouring heat in the interior of the body. As a result of this high internal temperature, the lungs become chronically inflamed and gangrenous. Such gangrenous parts then become so-called dead tissue, which is often expelled as phlegm in coughing.

To-day all consumptive diseases are rightly regarded with terror. The orthodox school of medicine, as cannot be disputed, is wholly unable to diagnose them with certainty, by means of percussion and auscultation, until they have reached such an advanced stage, that cure is generally impossible, It is sad to think, that notwithstanding the fact that the earlier stages of consumptive diseases may

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* See also: **"Am I well or sick?"** by *Louis Kuhne.* A vademecum and adviser for everyone. Published in German, English, French, Spanish, Portuguese, Dutch, Italian, Swedish, Danish, Hungarian, Urdu and Telugu (Indian vernacular) languages. Price of the English edition 6 d. Louis Kuhne, 24 Flossplatz, Leipsic.

be ascertained years in advance, yet the medical profession, with its inexact system of diagnosis, is wholly unable to recognize them.

It is just as impossible to cure a diseased lung by means of the famous (?) tuberculin, as it is to operate surgically upon it, as in the recent attempts at excision of the lung cavities. There is, as a matter of fact, no remedy which is able fully to neutralize the process of destruction of the lungs. But there is a means by which we can cause the destructive process to retrogress on the same path by which it has been gradually—often for years—advancing. By my method I succeed in bringing about this retrogression of the process of disease. The most important matter in the treatment of all pulmonary complaints, is the *timely recognition of their preliminary stages*, which are to be diagnosed with the aid of my Science of Facial Expression for many years in advance, often in early childhood. For this reason my method of diagnosis is of incalculable value to the consumptive. In point of fact, to the orthodox doctor this timely recognition of the disease is pretty much a matter of indifference, since orthodox medical science is not in a position to cure tuberculosis, whether it be in its earlier or later stages. The first stages are such that the patient himself generally has not the remotest idea of disease, wherefore it is often very difficult to convince the patient of his having a consumptive tendency. Thus animated by the best intentions, I once informed a domestic servant of mine, an apparently strong, healthy, girl, that she was suffering from pronounced consumption and would do well to commence a cure on my system, as otherwise the disease must certainly prove fatal within a year. The girl indignantly assured me that she was perfectly well, and had no need to undertake a cure. I said nothing, but four months before her death, I repeated the warning, unfortunately with the same result as at first.

Three months later she took to her bed, and within four weeks fell a victim to galloping consumption.

I will now proceed to discuss the cause of pulmonary diseases. All affections of the lungs are final stages of some other preceding, not fully cured, disease, which is generally driven inwardly by treatment with drugs. Sexual diseases lie at the root of most pulmonary affections, this indirectly being also the case with children, who inherit the predisposition to such. The foreign matter is accumulated in the system in a chronic state, but at procreation reappears in the child, which becomes scrofulous or consumptive. The seminal fluid is in reality a quintessence containing all the characteristics of the parent and transferring them to the child. I have observed that scrofulous persons without exception become consumptive in later years, so that the first disease is but a preliminary stage of the latter. It can thus be seen that a first, *i. e.* in the scrofulous condition, the system still has vigour enough to expel the morbid matter outwards and so preserve vital organs. It gradually loses this power, however. and is finally, *i. e.* when the state becomes consumptive, no longer able to prevent the destruction of the internal organs by foreign matter. *It is quite impossible that persons who are really healthy,* can be suddenly attacked by any kind of *tuberculosis* in case of temporary encumbrance with foreign matter, *however many tubercle bacilli they may inhale.* For the development of tuberculosis, there must be a high destructive internal temperature, tubercle bacilli only being capable of development at such abnormal temperatures. Such high, abnormal temperatures of the body are possible, however, only under certain conditions of encumbrance, inherited through several generations, or where the patient by an unnatural mode of life has completely ruined his constitution.

The main thing is clearly to perceive that all *lung*

diseases, like all other diseases, have their *source in the abdomen,* that is, in a much debilitated digestion. For even though in the most cases the disease may be inherited, we must not regard the case as one of direct permeation of the lungs with foreign matter. The fact is, that in comparison with the other organs, the lungs have not properly developed but remain weakly and delicate; and because thus capable of less resistance, the lungs then naturally become the seat of the largest accumulations of morbid matter. The foreign matter collecting in the system, in consequence of imperfect digestion, guided by the internal tension, is chiefly deposited where it finds least resistance. It is, therefore, of high importance for all having hereditary predisposition to lung diseases, to prevent any further encumbrance of the system with foreign matter.

The same cause which in our zoological gardens occasions the rapid death from consumption of the tropical apes, viz. debilitated digestion through change in food, is also the reason why they are so soon attacked by consumption at all. The sole blame has hitherto been laid upon the colder climate. This, however, is only right in so far that a cooler temperature always renders the process of fermentation in digestion slower and more sluggish. This is more especially the case when the animals cannot even have the food designed for them by Nature, there then being two conditions militating against them. I have had frequent opportunities of watching the various stages of health in apes after their being removed from their tropical home, and I have been able by means of my diagnosis to ascertain exactly that at the commencement only the digestion was abnormal, until then other disorders set in. With human beings it is just the same, except that the conditions are usually more favourable, since we are acclimatized. We have, therefore, practically only to regard our diet and mode of living.

In the case of consumptive patients, I have frequently noticed that the system is not in a condition to nourish itself even on the most carefully selected food, being quite dried up on account of the excessive internal heat. *Alimentation does not depend upon the artificial composition of foods, or on their concentration: it depends solely upon the digestive capacity of the organism.* But how much the digestive capacity varies, is well known to everyone who has had much to do with the sick. If the system is already heavily encumbered with foreign matter, the lungs will be especially endangered, on account of their large extent, because the foreign matter pressing up toward the head is often obliged to take its way through the lungs. When, now, the latter themselves are in this way once much encumbered, they frequently become the chief place of deposit for foreign matter, which then no longer presses upwards towards the head as before.

When decomposition commences in the lungs, it is the apexes which are usually first destroyed. This happens because the foreign matter in the system, on its transformation or fermentation, always presses upwards. The apexes of the lungs terminate in the shoulders; when the state of fermentation sets in, the fermenting matter presses up to the extreme points, and as it can go no further, the shoulders opposing a barrier to its progress, these points must necessarily suffer most. This is the cause of the pricking pain in the shoulders, so often experienced by consumptives before the lungs are destroyed.

I now come to the explanation of the origin of *tubercular nodules.* Tubercular nodules are formed quite in the same way as hæmorrhoids, cancer nodules, and in fact all other nodules down to the smallest pimple. It will be necessary for a clear description to explain here somewhat fully. I have already mentioned that a healthy body has always a moist skin; that the skin of a chronic patient,

on the contrary, is generally dry and inactive. In the former case the body has still the full vital power enabling it to expel all injurious matter; in the latter this is no longer so, wherefore much morbid matter, which should properly be expelled, remains in the body, there being consequently a predisposition to disease. You will often have observed that many people suffer periodically from boils, especially on the buttocks, on the neck or on the arms. The patient will have been afflicted with a certain heavy feeling over the body, which only passes away when the boils break. When the crisis has thus passed, he feels as through regenerated, or at all events much lighter and fresher. Let us examine further, especially as regards the origin of such boils. We observe where the boil is about to form, that for some days, or it may be weeks, before, that the spot is hard and begins to look red. It increases in size and swells, until a thick firm nodule forms under the skin, painful and inflamed. The skin draws, and the pain on moving is often very acute. When the boil has reached its crisis, it becomes gradually softer, until finally the contents force an outlet through the skin and discharge. In this manner the morbid matter which formed the boil is directly expelled from the body. The process is nothing more nor less than the critical expulsion of morbid matter, effected by the body itself. It may be asked why it is that we do not observe such a process with everyone. I have already stated that it is the same with the perspiration: some persons perspire, others do not. It depends upon the degree of vitality. Where the body still possesses a large store of vital energy and all the morbid matter cannot be expelled by means of the natural secretory organs, it secretes it in the form of boils. If, however, the body has no longer the required degree of vitality to produce such crises, *e. g.* if weakened by drugs, or during the crises, or through unnatural living,

the morbid matter accumulates and there is contraction, jus as in the case of the boil, but the system cannot draw them to the skin to form an boil. Hard places form, causing no pain; but the process remains there and instead of a boil we have a *nodule.* This, therefore, is nothing but an *undeveloped boil,* or a *quantity of foreign matter drawn together,* which in many cases remains shut up in the body. If the body still prossesses enough energy the nodules will be brought up to the skin. We can often clearly feel and see such in numbers in the neck and many other parts. When the vital energy is no longer sufficient, the nodules are formed on the interior of the body and are known as hæmorrhoids, tubercular or cancer nodules. If we succeed by some means in raising the vital energy of the body, we shall at once see an alteration in these nodules. It has long been observed in the hydropathic treatment, that numerous such boils form. The body, by this method of cure, as still used to-day by the older school of Nature Cure practitioners, becomes so vitalized that it is able to continue the process which has stopped, and boils are formed. Where we can still further augment the bodily vitality than has been possible by the means hitherto adopted by hydropaths, we can even directly resolve and disperse these nodules. If, then, whe can produce a rapid enough derivative action, such as by means of my baths, so as to conduct the morbid matter thus dispersed to the natural organs of secretion, at the same time being careful not to introduce new morbid matter through food, the troublesome boils never form on the skin at all, for the nodules are resolved in the interior of the body in the same way as they were formed. The older hydropathic system also succeeded in dispersing the nodules, but was not able to draw off the foreign matter, so that where the body still possessed the necessary vitality boils and pimples formed, which with my method rarely occur. I succeed in

drawing off the foreign matter in a more natural and rapid manner. We see then that tubercular nodules are nothing more than undeveloped boils arising from the same cause as all other nodular growths in the body. The fact that the nodules form in different parts of the body in different persons, depends solely upon the difference in the encumbrances.

Having now learned the cause and true nature of all nodules, and therefore also of tubercular nodules, the manner of curing them is also clear to us. We see at once that to cut out the nodules, as is taught by orthodox medical science, is the worst means possible of trying to cure the disease. We thus get rid of the symptom, but never of the cause. The nodules can only be cured by increasing the vitality, whereby the body is brought into the condition to expel the morbid matter. By reason of the pecularity of the vital powers and of the conditions of existence, such nodules, even in a calcareous state, may be dispersed by being caused to retrogress upon their former course. In this way, they may be completely expelled from the system, a process, however, which often requires the continuance of my treatment for years.

The directions taken by the masses of foreign matter arising from the process of fermentation, are not always the same; it therefore occurs that in one case the apexes of the lungs are first affected, whilst in another, the fermenting masses rise more in the middle, or in the front, causing asthma, catarrh, or iuflammation in the air passages. In fact, most consumptive patients suffer from an inflammation of the air-passages, even if often in a latent stage.

The different chronic, latent states of encumbrance in the lungs also lead to acute inflammatory diseases such as

Inflammation of the lungs and pleurisy. These are feverish curative crises brought on by the system in an

attempt to reject foreign matter, and apt to terminate fatally, when their treatment is not understood. These acute feverish diseases are generally devoid of all danger, however, if immediately combatted by my method of cure. In the cooling baths we have the means of fully mastering the disease, so that it can scarcely ever be said to endanger the organism, and the cure of all these acute crises is generally surprisingly rapid.

Explanatory of the above, I may here reproduce some reports of cases I have met with in my practice. I was once called in to a family, where a girl of nine was prostrate with severe inflammation of the lungs. The family doctor, an allopath, had already been treating the patient with creosote for a couple of months without success, and had so impaired the digestion with this poison, that the parents had given up all hopes of saving their daughter. This was the state of things as I was sent for in the last moment. I told the parents that if they would disregard the family doctor's directions and follow mine strictly, improvement would probably ensue in a short time. And so it did. Already on the second day, a turn for the better was observed, and within a week all danger was past. In a few weeks the girl could again run about out of doors. Had my treatment been adopted from the outset, in this serious case, instead of two months' unnatural treatment with creosote, the cure would have been effected in a few days as completely as then in a few weeks.

In all pulmonary diseases, in the interior of the lungs we find a very high temperature. During inspiration and expiration there always takes place within the lungs a very rapid process of decomposition of the atmospheric air. At the moment in which we respire, our lungs decompose this air into its constituent elements (oxygen and nitrogen). The oxygen remains partly in the body, while the nitrogen

is again expired with the gaseous impurities of the body. There is thus an uninterrupted process of decomposition (burning) going on in the lungs, a matter which long engaged the attention of chemists, before the fact was discovered. This process in itself causes a high temperature, which increases and becomes still more abnormal, where-ever the foreign matter accumulates, or ferments, in the lungs.

As I have explained before, the bacilli are merely products of the fermentation of foreign matter in the system, and their capability of development always depends, according to their variety, on certain temperatures. Tuberculosis being invariably attended by a very high degree of temperature, we have here the condition for the development of the tubercle bacillus. This medical science likewise knows, but unfortunately is not aware how to turn its knowledge to account. It only seeks for unnatural remedies against the bacilli*, whilst ignoring their nature.

The medical profession endeavours to explain each disease by supposing the presence of a certain kind of bacillus in each case. It is forgotten that just as one and the same plant varies in different climates; and just as the plumage of one and the same species of bird varies in different climates; so all bacilli as regards size and form, must be dependent on the temperature (climate).

To anyone who has rightly comprehended my remarks it will be easy to find the way to cure consumptive diseases. The abnormal internal temperature must be regulated, and at the same time the vital powers strengthened, until there is complete retrogression of the abnormal conditions in the system. To attain this end,

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* See: **"Cholera, Diarrhœa and Similar Diseases:** their Cause and their Treatment and Cure without Medicines," by *Louis Kuhne.* Price 6 d. Louis Kuhne, 24 Flossplatz, Leipsic.

together with observance of dietetic and other regulations, the use of my baths is absolutely necessary. The most difficult matter is, to apply the baths in right succession. The abnormal degree of temperature in the body does not admit of a diminution for a considerable time, so that not only the length of time but also the succession of the baths must be regulated in exact accordance with the state of the patient. This can be learned only under the guidance of some one familiar with my method, the more so, as there is much general misunderstanding about this point. The patient must also be much in fresh sunny air; this is of great importance in effecting a cure and must never be overlooked. Especially for consumptives sun-baths have a most beneficial effect.

As to inoculation with tuberculin, I condemn it altogether. Its "efficacy" is very easily to be explained. The poisonous matter with which the tuberculous patients are inoculated operates on the foreign matter, under certain conditions, much as yeast in dough, producing fermentation (fever). In consequence of this, a change may take place in the original state of fermentation of the foreign matter, causing a corresponding change in temperature. The result is that the tubercle bacillus, capable of development only in the former temperature, passes into another stage, which is generally termed "extinction." But the foreign matter is never really expelled, nor the cause of the disease really wholly removed. *Inoculation is, and ever will be merely a pseudo-remedy,* the ruinous effects of which on the health will surely come to light sooner or later. After only a few months, the outburst of joy called forth by the tuberculin inoculation process has given way to intense disappointment. On all sides we now hear, even from independent thinkers within the ranks of the orthodox physicians, nothing but condemnation of the system. To-day the matter of inoculation with tuberculin has hardly even

an historical interest. Here again we have a proof of the fact that *vaccination, or inoculation of any kind, is the greatest quackery which there is.*

A real cure of *advanced* consumption can be effected by aid of my system carefully practiced for years, even though in *very* advanced cases it may be difficult. In any event the condition of the patient can be rendered bearable till the very last moment. The cure of a consumptive depends solely upon his vitality, and whether the digestion is capable of improvement. If we succeed in improving the latter permanently, and rendering it normal, the patient will begin to recover in a surprisingly short time; if we are unsuccessful, cure is impossible. I have had many consumptive patients under treatment who were cured in an incredibly short space of time, because their digestion was open to rapid improvement. On the other hand, in the case of patients with hard purulent tubercules in the lungs, I have observed that the retrogression of these tubercules occupied years, and that every time one was dispersed a violent crisis was brought about, which although not dangerous was often very painful. My method enables us to regulate the internal temperature, whereby, if properly managed, the foreign matter is caused to retrogress, so that a cure is gradually effected.

If the body is strong enough, friction sitz-baths are the best means for expelling foreign matter from lungs and abdomen. Steam-baths, which in summer are better replaced by sun-baths, are also often to be recommended. Careful diet and plenty of fresh air are naturally also indispensable.

In cases where the disease is already very far advanced, these baths will be too exciting, and mild friction hip-baths are then advisable. The water may be at a temperature of about 81° to 86° Fahr. and must reach to the shoulders. The patient may remain at first five minutes, and afterwards longer, in the bath, according

to his inclination. The bath should be repeated several times a day. If the body afterwards becomes stronger, friction sitz-baths can be taken. Frequently however, the vitality and the capacity for bodily reaction will not be sufficient to effect a cure; but in any case the baths will always alleviate the condition. Wherever the digestion is capable of improvement, there is still hope of recovery.

I will conclude with an account of some cures.

Asthma. A lady, 65 years of age was so asthmatic that the physician in attendance, whose *creosote pills* and powders had only made her whole condition, and especially her digestion, much worse, prescribed as a last resource a stay in the South, there being no remedy which could be of any aid in such an advanced stage of asthma. The patient could scarcely take 10 consecutive paces so great was her difficulty in drawing breath. Anyone who knows the remedies of orthodox medical science is aware that sending the patient to a warmer climate is only equivalent to saying: "Nothing is to be done for you. We for our part give you up. Now try whether Mother Nature can aid you!" This patient also took it in this sense and therefore, at a friend's recommendation, put herself under my treatment, declaring to her doctor that she would rather die here than in a strange country. At the beginning of December, in bad, foggy weather, she placed herself in my hands. The upward pressure of the foreign matter in her body was very strong. She followed my instructions most conscientiously and it was not long before the upward pressure grew less, her digestion improving in a most satisfactory manner. The secretions of foreign matter, in the form of perspiration and evacuations, were abundant. The patient, according to my instructions, took cooling baths daily and often a steam-bath. Thus in a few months the retrogression of the disease was over. All the symptoms which had appeared from time to time during the progress

of the disease, now reappeared, though the retrogression proceeded about twelve times as fast as the disease itself had done. Each month of treatment removed an encumbrance which had been about twelve months in accumulating, so that within three months she was completely cured of asthma.

Another interesting case of asthma may here be mentioned. It is that of a gentleman of about sixty, who had been suffering from asthma for several years and was quite given up by his doctors. In consequence of the medicines he had been taking for years, he was in an extremely weak state. The very first baths brought the patient relief, but as this feeling was only experienced during the bath, or for a short time after it, the patient bathed oftener than I had recommended. Even during the night he not infrequently took a bath, the tormenting cough not admitting of sleep. Each time, after bathing for half an hour he could sleep quietly for an hour, until with the increasing fever the cough became so violent as to prevent further slumber. During each bath his system gathered so much vital power, that he could cough up a large amount of suppurating matter, this always bringing relief. From month to month, the patient, who had been little better than a living corpse, grew more vigorous and lively. After having applied the cure for a little over a year, he had so far regained health also in other respects, that to the astonishment of all his friends, his *head, hitherto almost bald,* became covered with a considerable *aftergrowth of grey hair.*

Tuberculosis (Advanced). A woman of thirty, who was suffering from advanced tuberculosis, put herself under my treatment. She nearly always breathed through the mouth, particularly when sleeping. Her mother had died of consumption at the age of 45, the predisposition to which disease her children had inherited. In childhood both my patient and her brothers and sisters

had been very scrofulous. As a girl of 20 her face had been round and full, and the cheeks unhealthily red, turning quite blue in winter. Before she was thirty she had gradually lost her corpulence, and the colour of the cheeks, as well as the condition of the whole body, became more normal. But towards the end of the twenties predisposition to consumption became more and more apparent. The digestion grew irregular, constipation alternated with diarrhœa, and the colour and smell of the excrements plainly showed how abnormal was the digestive process. Besides frequent headache and toothache, she felt *shooting pains,* especially in the *chest and shoulders.* Such pains are felt only *during* the process of destruction of the lungs. As soon as parts of the lungs have been actually destroyed the pains cease. The patient's menstruation also was always painful and irregular, often ceasing for months and then appearing too frequently. All this was attended by general lassitude, great anxiety and discontent. Anyone unacquainted with my Science of Facial Expression would have considered this woman, when she began my treatment, a picture of perfect health. A fine ruddy complexion and a full figure deceived the uninitiated as to the really dangerous state of this patient. The lady began my treatment fully aware of her serious condition. I prescribed her cooling baths, steam-baths, an altogether unstimulating diet and prolonged stay in the open air. By this means her general health was so far improved within half a year, that going upstairs, and long walks which had formerly completely exhausted her, cost her no exertion whatever. A satisfactory digestion and a much more contented humour had been attained, while the headaches quite disappeared. It could plainly be seen, that the encumbrance had begun to retrogress back to the abdomen. Twice during the first year of treatment violent crises occurred, when tubercules in the lungs were dispersed. During these crises, which lasted

two or three weeks, the patient frequently experienced a passing feeling of weakness, a *curatice crisis,* which considering her chronic condition was not remarkable.

During the second of treatment the patient's condition showed decided improvement. Only two crises occured, and thus after about two years her severe affection of the lungs was cured.

Tuberculosis. Another case worth mentioning is the following. The patient was a gentleman aged somewhere about forty, who in the opinion of several celebrated physicians was consumptive and had been accordingly advised to reside permanently in the south of Italy. I examined the patient by the aid of my Science of Facial Expression and found that the disease was a very chronic one, so that a stay in a warm climate could not possibly have prolonged his life for more than a year. I began with my cure at once. After only four weeks' treatment, his general health steadily improving, a catarrh of the bladder and intestines appeared, from which, nine years before, he had suffered severely for a long time. The disease this time, however, appeared in much milder form and was cured within a fortnight. The vitality of the body being raised by my method, these *chronic* and formerly suppressed disorders made their appearance again in *acute* form. The patient also suffered from gonorrhœa, to which he had likewise been a victim several times when in the twenties, but which had always been suppressed by medical injections. This was quite cured in two weeks. The lung complaint had now assumed an entirely different appearance, so that the patient considered himself quite well. By my advice, however, he continued the treatment for some time longer, and in a year and a half was completely cured.

Tuberculosis of the Bone and Caries. Very many patients afflicted with the above have undergone my

treatment with the best results. In nearly all these cases the sufferers had in childhood had the *rickets* — in a certain sense only a preliminary stage to the later disease. From infancy their bones had been unsound, carious and easily fractured—in the most cases this could be ascertained with certainty. At puberty, or even earlier, caries appeared, the bones of the legs or arms suppurating and swelling like a sponge, the joints also becoming greatly enlarged. In the case of some, the leg or arm had been amputated, and the majority of the patients had been declared incurable before coming to me for treatment. On my system retrogression of the disease began immediately, but amputated limbs cannot be replaced. According to my view, surgical operation in any disease whatever is the most unsuitable means possible to adopt as a cure. I maintain that no such unnatural procedure has ever yet really cured such a disease, or got rid of the cause. Only when we understand how to cause disease to retrogress on the same road on which it came can we cure it.

I recollect the case of a boy who came for treatment, both of whose shins from knee to ankle were open and suppurating. The doctors had proposed to amputate both legs, whereupon the parents brought the boy to me. The cooling baths and unstimulating diet were commenced and after only four weeks the bared bones began to be covered over from within outward, the skin growing over the sores, which were quite eight inches long, just as on a tree the bark grows over an injured spot. In six months both legs were quite healed, excepting two small trifling scabby places, which likewise disappeared within two months more. Moreover, the boy's general health was completely changed, and instead of his former melancholy disposition there was true childish mirthfulness.

In another case, a boy of ten had a tuberculous knee which was likewise to have been amputated. This time

it lasted over three-quarters of a year before the morbid matter was all drawn up from the knee-joint to the seat of the disease, the abdomen, where it was expelled at a sore on the thighbone suppurating uninterruptedly for three months. It was more than three months longer before he could walk and run like other children.

Lupus. The innumerable successful cures effected by my method, also in the case of lupus, proves that in this disease, as in all others, my doctrine of the unity of disease holds true. I will here cite a case of lupus of general interest.

The patient was a lady, 41 years of age, and had been perfectly healthy until vaccinated in her second year; from that time dated her misery. After the vaccination, obstinate *eruption of the skin* broke out, which in her tenth year developed into *lupus of the face.* For over thirty years this lady had suffered from this painfully disfiguring disease, without finding assistance anywhere, notwithstanding that she consulted many famous physicians. Her face was horrible to look at; in fact she could go nowhere without people turning their gaze from her with aversion. In this helpless condition she came to me, all the doctors having pronounced her disease incurable. My diagnosis showed an extremely favourable position of the encumbrance, so that I could assure her of good prospects of a rapid cure. This opinion was confirmed. After only a fortnight the disfiguring lupoid places on the face had undergone considerable change and were no longer quite so repulsive. Her digestion, in particular, which had till now never received any attention, had also improved quite remarkably. The result was abnormal evacuations, whereby the morbid humours were expelled. In seven weeks the patient's skin assumed the normal colour.

The rapid cure in this case was due solely to the fact that the encumbrance was a front one. Readers of my

work on my new system of diagnosis, the Science of Facial Expression*, will know how to explain this.

I have also had lupus cases, which though not nearly so deep seated, took a much longer time to cure. The most wearying cases are, as experience shows, those in which the encumbrance is in the back or left side.

Many such patients have stopped the treatment after only a few weeks, because they could remark no particular change in their condition, or at most an improved digestion. Unfortunately they did not possess the perseverance to continue for the time required to effect a cure of their disease.

My system proved very successful in the case of a lady in Stettin. The patient had suffered from *lupus of the face* for nineteen years, and could no longer show herself to anyone. She always wore a thick veil, in order to conceal her disfigured face. All the remedies at the command of modern medical science had been tried unsuccessfully for nineteen years by this lady before she came under my treatment. Improvement at once began, and a cure was soon effected. The lady wrote me the following unsolicited letter of thanks:

"Stettin.

"Dear Mr. Kuhne,

I feel it my duty to express my warmest thanks to you for the good effects of your method in my serious case. I employ it with the *greatest success* and now feel strong and well again, and am again able to attend to my duties without difficulty. I feel all the happier, because all the

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* **"The Science of Facial Expression"**, by *Louis Kuhne.* A hand-book of a new system of examination to ascertain the state of the disease, based upon original researches and discoveries. Fully illustrated. Has appeared in German, English, Spanish and Telugu. Price of the English edition, paper-cover 10 s., elegantly bound 11 s. Louis Kuhne, 24 Flossplatz, Leipsic.

doctors whom I have consulted within the last nineteen years have been unable to help me or even afford relief.

For this reason I recommend this method to all sufferers from whatever cause, in the firm conviction that it will aid them, and beg, Sir, that you will publish this for the benefit of the cause and of all sufferers.

With sincere gratitude,

I remain,

Yours faithfully,

A. S."

Sexual Diseases.

AWAY with prudery, away with false shame, which are but the veil to mischievously blind; the veil behind which, concealed to view, there sprouts and flourishes in all its hideous corruption, the evil which in the light of knowledge and common sense must fade and die. If we would speak of the hidden ills of mankind, of secret diseases, it must be openly and without reserve. So widespread and so great is the mischief which sexual diseases cause to mankind that it would be nothing short of sin, were I to remain silent, when my system of cure has given me such a complete mastery over these complaints. An immense amount of misery is caused to mankind simply by the general ignorance which prevails concerning the nature of these diseases, and more especially as regards their treatment with medicaments. For this reason alone, it appears absolutely necessary to speak openly on the matter. The fact that to-day sexual diseases are more common than ever before, cannot be disputed. Syphilis, in particular, which claims hundreds of thousands of victims annually, brings with it the most unspeakable misery.

The methods employed, except that of the Nature School, are powerless against syphilis, at the most they succeed, the body being smeared with mercury or the like, in bringing about a temporary latent state of the disease, a standstill for the time being, which unfortunately is often called a cure and regarded by the patient as such. But exactly for this reason, unspeakable mischief has been

wrought. For many patients, on the strength of the doctor's assurance that they are cured, have married: only too soon to find out from the sad results of the marriage, how greatly they have been deceived. The health and life of the wife are placed in the greatest jeopardy by cohabitation with a man in whose system there is latent syphilis. The nature of sexual intercourse is such, that there is, in a certain degree, mutual compensation between the two bodies. Thus if the woman is not very healthy, latent syphilis is soon transmitted to her; having as a result that she falls a victim to one disease or another. The children of such marriages are always unfit, never being properly developed. For this reason, I maintain that the latent stage of syphilis is far more dangerous than the acute one; for in the latter, the person affected bears a sign that plainly shows the true state of affairs.

The medical profession acknowledges a *latent stage* of syphilis, though only able positively to ascertain its existence, when acute syphilis again breaks out after a continued period of latency. Then when quite unable to deny the fact, it confesses that the disease has been latent in the system all the while. But if the facts did not speak so plainly, modern science even here would certainly never admit the existence of a latent state of disease.

By the aid of the Science of Facial Expression, the latent stage of syphilis cannot remain concealed, even in cases where such acute relapses have not yet occurred. And by its means we are likewise enabled to ascertain, long in advance, any predisposition to sexual diseases, so that the ill can be obviated. I need not enter into details concerning the several sexual diseases: *the whites, gonorrhœa, chancre, bubo, syphilis, pollutions,* etc. The name of each particular sexual disease is quite indifferent to us, since we know that all have one common cause. The difference in their form, we know, depends

simply upon the difference in the predisposition, that is in the encumbrance of the particular person with foreign matter.

It is by no mere chance that Nature has partly combined the sexual and secretory organs. The system strives to direct the products of secretion toward these outlets, for which reason the largest accumulations of foreign matter are found here. This is most distinctly observable in women, and is therefore of importance in sexual intercourse. It is unavoidable that these sharp secretions should be transmitted to the body like an ointment, by reason of capacity of the skin for absorption. Thus the most morbid matter present in the woman, is transmitted to the man, and *vice versa.* If the man is more heavily encumbered than the woman, the semen, composed of the fluids of his body, will be incorporated in the woman's system and make her more diseased than before.

There is another circumstance which must be explained somewhat fully. *Sexual impulse* itself is a fact which, although universal, has not been satisfactorily explained, and remains more or less obscure. Orthodox medicine has little to say about its nature, still less as to when it is normal, and least of all upon the causes rendering it abnormal. Nevertheless one finds in the text-books that next to the instinct of self-preservation, the instinct of propagation is the strongest there is in the body. It is therefore inconceivable, why the factor only second in importance to life, should now-a-days be so despised as to be considered, in a measure, as something unnatural, as extremely unæsthetic and indecent. Sexual impulse, like all other impulses, has a normal state and an abnormal one, resulting from the encumbrance of the system with foreign matter. In the state of the sexual impulse, one has a very accurate thermometer for the condition of one's health; especially for any latent, chronic stage of disease,

and for the effect of the mode of living on the organism. The latter is only brought from its normal condition by reason of increased pressure of foreign matter towards the natural secretory organs, and consequent increased excitation of the nerves. This pressure also effects the sexual apparatus and causes an increased sexual impulse, accompanied by gradually decreasing potency. Normal sexual impulse leaves man quite free from any disturbing lust of sense or thought. The impulse is normal only in healthy individuals, and can only be kept normal by a wholly unstimulating diet and natural mode of living. It becomes abnormal whenever there is an encumbrance of the system with foreign matter, or when a chronic, latent condition of disease begins.

It is only a person whose body is already encumbered with morbid matter, who can get a disease of the sexual organs. Thus it can be explained why the transmission of the poison of gonorrhœa, chancre, and syphilis should infect one person and not another. I know of cases in which, of two men exposed to the same danger of infection, the one remained quite well, while the other was infected.

I also know another case, in which a woman had intercourse with but one man for a length of time, his intercourse being similarly only with her. On his removal to another place, his successor followed him in the possession of this woman. Now although neither of the men was ill, nor had any intercourse with other women, the second man was attacked by syphilis in a short time, whereas the woman remained quite unaffected by it.

As already observed, the foreign matter accumulated in the sexual organs of the one person, is directly transmitted by sexual intercourse, and operates on the foreign matter in the other person like yeast in dough, creating fermentation, especially when there is a tranquillising and strengthening effect on the system, brought about by the

mutual equalisation. By this action the system gains to much in vitality, that it is stimulated to an attempt to expel the foreign matter which it contains, by a curative crisis, like gonorrhœa, chancre or syphilis. These facts also throw light on those frequent cases in which a husband. for instance, after living for years in regular sexal intercourse with his wife, is infected with syphilis through chance intercourse with another, presumably healthy woman. The intercourse between the married couple did not have this effect, the systems of the two persons having mutually compensated each other; whereas the new intercourse required an entirely different equalisation, causing disease.

I mention these cases only to show in what manner sexual diseases arise, and what part the direct transmission of the contagious matter plays in the case. It is far from my intention to support illicit sexual intercourse in any way whatever. But here I have only to do with disease, its nature, cause and cure, and must, therefore, also adduce examples such as the above, which alas! are only too common.

We come, then, to see that *sexual diseases* are nothing more than *curative crises of the system,* by means of which the latter endeavours to expel the foreign matter burdening it. Thus, in order to effect a cure, we must *get rid of the cause of the disease,* that is, of the foreign matter encumbering the body, when all the ills resulting from such cause will gradually disappear of themselves. The error of the orthodox medical school is a most mischievous one. By means of *injections,* medicaments (most dangerous poisons) such as *mercury* in various forms, *iodine, iodide, of potassium, iodoform,* etc., the orthodox doctor thinks to cure disease, whereas, in reality, he is simply suppressing the curative action of the body. This naturally can only be at the cost of bodily vitality, which otherwise would have been able to bring about a curative crisis. On the introduction of the poison, all the vital power is required to

render such uninjurious, so that the organism may be maintained. It is thus wholly diverted from its curative action.

What the orthodox medical school calls a cure, thus discovers itself to be a far more serious injury to the system than was the actual state of disease. Its true character is hidden, however, for it is clad in the tempting and deceitful garb of a painless and delusive, but chronic latency. Thus, no longer exhibiting the acute symptoms of the earlier sexual disease, it is unhappily mistaken by the many as a true cure. Supported by irrefutable proofs, I am justified in thus reproaching the much lauded medical profession with making such grave errors. Some of these proofs I will here produce.

As we have seen, the suppression of sexual diseases by means of drugs indicates no improvement at all, but only a pseudo-cure, a mischievous aggravation of the condition. Should we sooner or later-though it may take years-succeed in restoring the vital power of a person whose organism has been thus weakened by drugs, it may happen that all those symptoms which have been suppressed, reappear temporarily in milder form. This has been proved in a most striking manner innumerable times in my practice. The derivative action of my baths, enable us to hold these diseases in such complete check, that they altogether lose their dreadful appearance. No one need fear these harmless curative crises. They are a natural result of the dispersion of the morbid matter in the system, and of the drugs which have been applied.

With my method, all sexual diseases, even the much dreaded *syphilis,* lose their frightful guise. I am not exaggerating when I assert this disease which is incurable by medical treatment, can be radically cured on my system like any other disease, without, any injurious effects whatever on the patient's future offspring having to be

feared. At the same time, I am far from saying that every syphilis patient is curable, but only those whose digestion is capable of improvement. Even where the treatment may last very long, there is always the clear possibility of a cure, in proportion to the vitality and the nature of the encumbrance of the patient.

The appearance of a sexual disease, as already stated, is merely a sure sign of a heavy encumbrance of the system with foreign matter, or, in other words, of a latent disease. If not cured, however, these diseases become the preliminary stages of other chronic and usually worse diseases, such as *asthma, pulmonary affections, tuberculosis, cancer, heart disease, dropsy, gout,* etc. And even if these do not always appear in the patient himself the results of the false drug-treatment unfortunately only too often make themselves seen in the offspring. Many an innocent mother is at a loss to imagine the reason for the appearance of some such disease as *affection of the lungs, tuberculosis, scrofula, rickets* in her children, because she is ignorant of the true cause of these complaints, and cannot throw the blame upon herself. Of the husband's secret sexual diseases and of the effects on the offspring, she knows nothing. Here we see again, the sins of the parents against the children. The sick, weakly offspring is a mirror from which, equipped with my new teachings, the physical condition of the parents at the time of procreation may be learned exactly.

On examining the course of the most common sexual diseases, such as the *whites* and *gonorrhœa,* we obtain fresh confirmation of my theories touching morbid matter. Attended by local inflammation, the system ejects the morbid or foreign matter (pus) from the body. Through this fermenting, feverish process, the inner organs may also be simultaneously attacked and inflamed, when one does not know how to render the process wholly harmless to the organism. In such case, the process would

be a curative crisis in the true sense of the word. The larger the amount of the morbid matter expelled, the greater is the cleansing effect on the system. The chief point is render this process of secretion as painless and little disturbing to the body as possible, yet at the same time in no way to interfere with its thorough working. By means of my baths, suited to the particular circumstances of each case, we attain the desired result in the most satisfactory manner. The duration of the cure, naturally depends upon the extent of the encumbrance.

Consider for a moment the "remedies" applied by orthodox medical science in sexual diseases: *corrosive injections,* with *solutions of lead, mercury, zinc* and *iodoform* into the urethra or vagina, with the object of forcibly suppressing the excretive efforts of beneficent nature. The very character of the drug is sufficient to show the utter perversity of such attempts. It is surprising that no one has yet asked himself *where the pus goes to after the suppression* of suppuration with medicaments. Nature never does anything without a definite reason. *Natural processes* can only be assisted by *natural means,* not by unnatural remedies running counter to all the conditions of life.

It is through this gross mistake of medical orthodoxy that we find everywhere lunatic asylums, hospitals, clinics and sanatoriums springing up like mushrooms. If the remedies of the medical profession were really beneficial, one would, on the contrary expect to find a decrease in the number of these institutions.

In closing this part of the present chapter, I will cite two cases from my practice. Some years ago a man, about fifty years of age, consulted me concerning a serious *disease of the heart.* After I had given him the requisite advice, and he had followed my cure for a fortnight, there appeared a former affection of the kidney, and after this was cured, just a fortnight later, an attack of gonorrhœa, from which he had

suffered eighteen years before. Both disorders appeared in a far milder form than when he first had them. Within a week, the gonorrhœa was also healed, and the patient's general health improved surprisingly, whilst his heart disease had vanished completely. During the course of treatment, the patient related to me that he had formerly first suffered from *gonorrhœa* and had consulted two of the most celebrated professors, whose remedies had had the desired effect: the disappearance of the gonorrhœal symptoms. Some years afterwards the gonorrhœa returned, but a second time he quickly got rid of the complaint by using medicaments. Two years later he was attacked by the kidney disease, which had given him much trouble. This, after consulting eight well known physicians, he at all events so far suppressed by medicaments that the alarming symptoms disappeared. Not long after, the heart disease began, which had refused to yield to any remedy, threatening finally to pass over into *dropsy*. I explained to him that the gonorrhœa had not been cured, but simply forced back into the system, and thus formed a preliminary stage of his subsequent kidney disorder, which on suppression became, in turn, the cause of the heart disease, which, without my treatment, would have ended in dropsy. Of the connection between these various symptoms, he was fully convinced by the cure.

I may now mention a case of *syphilis*.

Baron v. E., aged 47, consulted me some years ago for *syphilis*, from which he had suffered for ten years. He related how he had four times undergone the allopathic treatment by *mercurial inunction*, at the hands of eminent doctors. He had likewise been dosed with *potassium iodide;* but in spite of all this the syphilitic symptoms always returned, and open sores in the mouth and on the feet made their appearance. As a consequence, he lost all faith in allopathy, the more so as his general health after

the mercurial treatment was no longer nearly so good as formerly. More recently he had suffered from a feeling of oppression in the head, and he had lost his clear memory. By means of my Science of Facial Expression, I ascertained that my patient was suffering from a serious encumbrance, besides which there were distinct signs of medicinal poisoning. It was quite clear that the syphilis had only been rendered latent by the mercurial treatment. I ordered two to three baths daily, and simple, natural diet. The result was favourable, for in half a year the condition of the patient had quite changed; his digestion, above all. had greatly improved, and his appearance was fresh and healthy. With the removal of the cause, the syphilis also entirely disappeared; nor will it ever return. Further reports of cures will be found in Part IV.

Impotence. There is no more striking proof of the degenerate condition of the present generation than the so common disease impotence. Medical science has, up till now, been able to find no cure for this illness. It stands absolutely powerless against it, because it is not acquainted with its nature. Medical orthodoxy does not know, that every diseased condition of a patient is caused only by the body becoming encumbered with morbid or foreign matter. Every case of impotence may be healed, if we can but free the body of its encumbrance. To-day, armed with experience and the results of my system of cure, we are in the happy position of being able to attain this end. With a quiet conscience I can say, that in very many cases a cure has already been effected, and that such cures will continue to be effected, if my method is intelligently used and the treatment persevered in with an iron will. All irregularities in the functional power of the sexual organs can be cured by abolishing the cause. In the same way also the sexual impulse can be normalised, so that the person thus cured is in a position to live quite naturally as regards

the sexual condition. How often do we find that the firmest normal principles are powerles to guard against most unnatural sexual excesses, such as, for instance, *onanism.* I find comforting assurance in the many warm words of gratitude which I have earned from earnest youths and men of true moral character, who through my method have been freed from these fatal habits. (Cp. reports of cures, Part IV.)

Impotence in women we know as *sterility.* It occurs not only as the result of *malformation* or abnormality of the inner *sexual organs;* there may also be complete insensibility of these organs. I have dealt with this matter more in detail in the chapter on Diseases of Women, Part III.

Sexual impulse in men is quite different from that in women, and impotence, therefore, also takes another form in males. We may remark perfectly definite symptoms years before it actually occurs; *abnormally increased* and nervous *sexual desire,* the result of chronic disease. In the case of children and youths, there is great irritability, resulting from chronic inflammation of the sex organs, whence proceeds that so much spread evil of to-day, *masturbation.* In adults we find the irritability taking the form of unnaturally increased sexual desire; and simultaneously the mind is more or less captivated with wholly unnatural erotic thoughts. In youth there arises a growing shyness in the presence of the female sex, which in many cases amounts to absolute fear and is nearly always accompanied by impotence. If to-day we find so many well situated men unmarried, the real cause of the fact lies in a certain shyness before women, arising from impotence. How many young men in the best years are already quite unable to normally perform the sex act, having become impotent as the result of onanism. How many *suicides,* or attempted suicides, are not to be ascribed to this cause?

The following interesting case may be cited here.

Some years since, a young man, aged about 23, the heir to a large estate, consulted me. He had practised onanism since his twelfth year, and now intended to try my method of cure, which had been warmly recommended to him, in order to gain mastery over his vice. Day and night he was haunted by his trouble; he was already quite incapable of learning anything. Powerless, as he said, he was compelled to resign himself to this self-abuse, although he strove with all his might against it. A remedy, he had looked for in vain; nor did his will prove strong enough to resist the impulse. Sometimes, it is true, with the greatest determination, he had succeeded in banishing the vice for some months; then overcome by an unresistable impulse he had given himself all the more to the indulgence of his passion. He was possessed by the deepest feeling of inward dissatisfaction, felt himself useless in the world and went about with the *thought of committing suicide.* Now, his parents wished him to marry; but he felt an absolute aversion to it, being altogether impotent. He set his last hopes in my method; if that did not succeed, he would refuse entering into matrimony.

An examination of his condition by means of the *Science of Facial Expression,* showed that the cause of his impotence was chronic dyspepsia, to ged rit of which was naturally the first task. His body — an account of his early manhood—would react most favourably for the cure, so I could assure him of the best prospects. Conscientiously and energetically, he followed my system, and after only a few months his condition was greatly improved. My theory had here again found a brilliant testimony to its truth. The baths, which went right to the root of the disease proved most effectual, assisted by a natural, unstimulating diet.

After thirteen months' treatment the *impotence* and *onanism* were cured quite in the same way as so many other cases have been successfully treated.

Diseases of the Bladder and Kidneys. Diabetes. Uræmia. Bed-wetting. Liver-complaints. Gall-stones. Jaundice. Intestinal Diseases. Sweating Feet. Herpes.

IT may appear very unsystematical, and altogether unmethodical, to thus class together a number of morbid conditions, which at first sight to the layman seem to have nothing in common. In the eye of the medical profession they are, it is true, all quite separate diseases, each accordingly having its own special treatment. Under the powerful lens of my new science of healing, however, we are able to discover their common origin and intimate relation.

The origin of all is again to be readily explained by accumulations of foreign matter; and here we have especially to do with the accumulations affecting the normal function of those organs so important for the secretion of waste matter from the body: the kidneys and skin. Here belongs, too, a consideration of the cause of the gases which arise in the stomach during digestion—so-called *flatulence*.

These gases through their expansion in the digestive canal, together with the vermicular movement of the intestines, contribute on the one hand to carry forward the food; on the other hand, in volatile state, likewise by reason of their expansive power, they pass directly through the walls of the digestive canal into the whole body and the

blood. To make this clear I will give you an illustration. The water upon the earth is limited to definitely bounded seas, lakes, and rivers, so that the earth possesses a system of water-veins, resembling the blood-vessels in the human body. In addition to this, however, in gaseous form the water also fills the whole air and all parts of the earth. It is similar with the food and drink conveyed into the body; they are apparently limited to well-defined passages and organs, and yet they permeate the whole body, partly in a gaseous state. Hence alcohol (beer, wine, brandy) is felt soon after drinking, throughout the entire body, especially in the head, even though the gases are expelled partly as perspiration and exhalations, if the skin performs its function normally. They are expelled both without perspiration and as perspiration. This perspiration smells differently in the case of almost every person. Whenever it becomes abnormally saturated with old foreign matter, it smells disagreeably. Normal perspiration, on the contrary, hardly affects our sense of smell unpleasantly. Inside the body a secretion of these gases also occurs through the kidneys. The kidneys convey them mixed with fluid through the ureters into the bladder. Perspiration and urine are, therefore, two nearly equivalent and similar products of secretion. As soon as the bladder is sufficiently full, a *desire to pass water* is felt, and *must be immediately gratified,* if the system is not to suffer serious injury. This point is too important to be lightly passed over. Unfortunately, prudery and present day customs often prevent our acting as we should in this respect, so that it is little wonder that we find matter retained in the bladder and kidneys, which should have been expelled. Parents and teachers cannot be sufficiently admonished to explain to children the evils arising from *retention of the urine and fæces.* In no case should children (in whom the transformation of matter goes on much more rapidly than in adults, and whose

vitality is also far higher) ever be kept from statisfying their needs in this respect, if we would save them from injurious, perhaps dangerous, consequences. Should the urine in the bladder not be expelled at the right time, like everything else in the human body it is subject to a further constant alteration, fermentation taking place. The temperature of the bladder is raised, and as a natural consequence there is evaporation of the fluid part of the urine, the salts remaining behind. By this process the subsequent secretions of the kidneys are prevented from entering the bladder and likewise undergo changes. If the desire to empty the bladder or bowels is not gratified at the right time, it often passes and then it is difficult to recall it when we will. But what, then, becomes of the urine? It has decreased in the bladder and must therefore have in some way reentered the body. Part of the urine, we know, in consequence of its constant process of decomposition, has again passed into a gaseous state, and has reentered the entire system and the blood, just as in the digestive process. In this process of vaporisation, the salts and other insoluble matter remain in the form of minute yellow crystals in the bladder and kidneys and are afterwards, though not always wholly, expelled. If the sediment in the chamber vessel is examined under the microscope, magnified two hundred times, we shall find that it consists of minute, yellow crystals, which look yellow singly, but reddish when seen all together. This process, when the bladder is particularly heavily encumbered, leads to the common disorder called

Stone, the treatment of which is described more in detail on page 203. Stones form only under abnormal bodily conditions or as the result of an unnatural diet. They arise in the same way as does the incrustation in steam-boilers, which forms only at a high temperature, when hard water has been used, being much less with soft rain-water. The urine retained in kidneys evaporates, and the little crystals unite.

As long as they are very small, they pass through the ureters with the urine into the bladder, without causing disturbance; but when they grow larger, they cause, during their passage through the ureters, the pains known as *nephritic colic,* their sharp, crystalline surfaces irritating and injuring the membrance of the ureters. In the bladder itself the same process takes place. Should the urinal outlets, by reason of heavy encumbrance of the abdomen, become narrowed *(strictures),* it may easily happen that the stones can no longer be expelled with the urine, and then form the basis of a larger crystalline mass in the bladder. By the continual motion of the stone in the bladder it assumes a rounded appearance, but it always retains a crystalline fracture.

That stones will always form if urine is retained does not follow. The character of the urine may be such that the whole of it is transformed and is deposited as foreign matter in the body. In this case it may lead to most various diseases, such as to nodular formations as described, on pages 171—174. Some years ago, I had a boy under my treatment, whose whole body was covered with nodules, about the size of a pea. These arose once when, in consequence of a cold, he could pass no water for several days. I explained that the nodules would soon vanish if they were only a result of the retention of urine; our task would be to transform them into urine again. The boy thus commenced my cure, and in a few days copious quantities of water were passed, which continued for several days. To the astonishment of the mother, the nodules disappeared all of a sudden, as it were. In this case the foreign matter arising from the transformation of the urine, had formed the nodules, which the body, having a high vitality, was able to secrete again.

Diarrhœa and *Constipation,* as I have already shown, arise from one and the same cause: the encumbrance of

the system with foreign matter. It is just the same with urination, only that here the obstruction is not directly, but only indirectly perceptible, through *abnormal colour of the skin,* abnormal *redness, herpes, headache, tumours, stone* etc. In a sense we have here only a preliminary stage of other diseases.

Diabetes, a disease resembling dysentery, is, on the contrary, directly perceptible. The inflammation caused by the internal fever, to which also, the tormenting thirst of diabetic patients is due, does not in this case occasion constipation and the formation of stone and tumours, but a too rapid removal of matter, accompanied by decomposition of the juices. The urine thus issues from the body in a morbid, fermented, sweetish state. Stone and diabetes are identical in character, differing only in external symptoms. To patients suffering from these diseases my baths are of the greatest value; they diminish the internal fever, thus relieving the great thirst.

Both stone and diabetes have been cured by my treatment in one and the same manner, by getting rid of the cause. The stone disintegrates into granular particles, in which form it is usually expelled with the urine. In treating sufferers from stone, it is surprising what large quantities of water they are obliged to pass when taking the baths. The patients always wonder where all the water comes from, though the explanation is very simple. The urine which formerly had evaporated and accumulated as foreign matter in all parts of the body, is now brought back along its old paths, finally leaving the body as urine. I have had patients who for some time could pass water properly only during the baths. The normal condition of the bladder returned gradually, step by step with the disappearance of the cause of the disease.

In the case of the Emperor William I. we see how old

one may become despite stone, for although he suffered from a large stone in the bladder, he attained the age of 90. This was solely due to the favourable position of the encumbrance of the deceased monarch. The disorder, however, showed itself much earlier and in a far worse form in the case of his son, the late Emperor Frederick.

Uræmia, a condition in which urea is found in the blood and entire system, generally accompanies disease of the bladder and stone. For experts in my Science of Facial Expression, this derangement does not remain hidden, even in the very first stages, when the patients themselves do not yet have any idea of it. There is no remedy which so quickly cleanses the blood, and the whole system, of this foreign matter, as the baths recommended by me.

Bed-wetting, that unpleasant state in which the patients cannot retain their water, is likewise to be traced solely to the encumbrance of the abdomen with foreign matter. A fistula has usually formed in the bladder, through which the urine escapes. This condition is almost invariably owing to other previous, uncured diseases, forced back into the system by medicaments and unnatural treatment. (Cp. Reports of Cures, Part IV).

Both this form of disease and

Intestinal Fistulæ have often been radically cured in my practice in a very short time, frequently in a few days or weeks. A longer cure is only necessary when the disorder had already become chronic, and the patient has been injured by the drug treatment.

Catarrh of the Bladder is to a certain extent only an acute preliminary stage of a serious bladder disease and stone, a critical, inflammatory state of the bladder and urinary passages, attended by painful urination. Like all acute forms of fever, it can be very quickly cured by my method, its cause being the same as that of all other diseases.

I was called upon one occasion to a patient who had been suffering from catarrh of the bladder for already a fortnight. The *prostate* was much swollen and the patient could only urinate with the greatest pain. Every ten minutes, also, there were extremely severe *spasms of the bladder*. As the urination was becoming more difficult and painful every day, the doctor in attendance, on the evening of the fourteenth day, proposed to use a catheter—altogether impossible considering the swollen condition of the prostate. The physician said he would have to chloroform the patient, which the latter would not allow, sending for me the same night. The first friction bath caused the spasms, which otherwise had come on every ten minutes, to cease; and after half an hour's bath, the patient could pass water without pain. Having taken the bath for three quarters of an hour he got into bed again. During the night very copious perspiration broke out, and he passed large quantities of urine, without any pain at all. In a few days, in this way, the catarrh was completely cured.

Liver-complaint, Gallstones, Jaundice principally occur in cases where there is an encumbrance of foreign matter on the right side of the body. The secretion of the liver, the bile, which as we know is emptied from the gall-bladder into the duodenum, exercises an influence on the digestive process, diminishing fermentation. Whenever the liver is affected by an encumbrance of the right side, and its normal secretive function is thus obstructed, I have noticed that an entirely different amount of perspiration exudes from the body, than when the encumbrance is on the left side. Thus arise, according to the nature of the encumbrance, gallstones, and induration of the liver. All such patients suffer from slight, often morbid, and ill-smelling perspiration, and particularly from *sweating feet*. The evaporation, decomposition and fermentation of the bile shows itself very plainly in a dark colour of the skin

the familiar *liver-spots*, and leads in many cases *to jaundice*. (Compare Reports of Cures, Part IV). In treating such diseases I have observed that with my treatment a remarkably rapid cure is effected.

Sweating Feet. As seen from the above, this complaint is very closely connected with disorder of the liver. It only occurs as I have often observed, when accompanied by the latter, so that excessive perspiration of the feet points years in advance to the fact that an encumbrance of the right side is developing. The perspiration usually ceases in advanced stages of diseases of the liver and gall-bladder. The patient's condition then steadily grows worse, because the morbid, fœtid secretions of the feet remain in the system, causing other and much worse states of disease, such as herpes, cancer, etc., which are in turn considerably more difficult to cure, and require far more time. The forcible suppression of the excessive perspiration of the feet, by means of medicaments like chronic acid, inflicts serious injury on the health of the patient. The injurious consequences of medicinal treatment are generally not observed for a long time, even for years, when some far worse disease makes its appearance. The artificial suppression of the morbid perspiration by drugs is just like stopping up the main sewer of a great city, into which all the branch sewers lead, because at the outlet there is an obnoxious smell. Undoubtedly the stench would be suppressed at the outlet of the main sewer, but this would bring about an infinitely worse state of affairs in the city, which would everywhere be filled with pestilential odours.

It is much to be regretted that our Army Administration, following the instructions of modern medical science, which is quite in the dark regarding the nature of these diseases, recommends soldiers to use chromic and salicylic acid etc. to cure sweating feet. I urgently warn all against this mischievous remedy. With my treatment, the annoying per-

spiration soon disappears of itself, for the good reason that the cause is removed.

Herpes and Skin Diseases. These so frequent diseases have also one common origin, no matter what particular form the eruption may take. I have treated very many patients suffering from these complaints, with the best results, and have nearly always found confirmation of the fact that these diseases are a more advanced stage of suppressed perspiration of the feet or skin. They signify a chronic condition, resulting from the suppression of another illness, and therefore the treatment they require must be longer and most conscientiously carried out.

Herpes may be dry or attended by a serous exudation. The former is usually more tedious to cure. Children often get herpes, which may always be traced back to hereditary encumbrance, or suppressed children's diseases, often to vaccination.

For the sake of clearer explanation, I may here introduce two cases taken from a large number of such.

The patient in the first of these cases, had suffered from *eruption of the skin* from the date of his being vaccinated a second time, and the disease had spread itself all over his body. He had to put on gloves at night and had his hands tied in order that he might not scratch himself. His trousers, and even the pockets of his overcoat, he regularly scratched through in a thort time. He was unable to join his playmates in their games and endeavoured to pass the time in reading, which only increased his depressed condition. The older he grew the worse became the disease, he was quite broken down in spirits and could think only of an early death awaiting him.

Accidently he heard of the older Nature Cure System, and soon after of my method, through coming across my textbook of the New Science of Healing. Acting on my advice, he took two baths daily, adopted a moderate, un-

stimulating diet and soon to his joy remarked an improvement in his general condition, followed by a gradual healing up of the eruption. After some time the herpes, the fruits of vaccination, was completely cured.

The other case was one of *eczema*. A young man 24 years of age was suffering from this dreadful disease. The head and neck were the parts chiefly attacked. Ointments and drugs had proved anything but beneficial, so that he had lost all faith in the medical profession. He came to me and commenced a cure according to my special advice. I was able to assure this patient also that there was the prospect of a successful result; the diagnosis showed a front encumbrance. In a few days his bad digestion was better, and simultaneously the *eczema* improved visibly. On the third day the exudation ceased, and in 16 days there was no longer a trace of the eruption. During this period, too, the neck of the patient, which had been far too thick, decreased by nearly an inch and a half. The morbid matter, which had been the cause of the enlarged neck and of the eczema, was carried off in the copious excretions from intestines and kidneys. Further reports of cures, including one of *sycosis* (eruption about the chin), will be found in Part IV.

Heart Disease and Dropsy.

THERE is a long list of heart-diseases from which humanity suffers, and which the medical profession treats in the most different ways, according to the particular symptoms in each case. The disorders are divided into organic diseases of the heart and cardiac valves, and cardiac symptoms, which have their origin in more temporary causes. But if we enquire without prejudice into the cause of diseases of the heart, and seek their explanation in natural processes, we shall here also certainly come to the conclusion, that the source of all heart diseases is the encumbrance of the heart with foreign matter. To divide these affections into various kinds is, therefore, wholly purposeless. It is only on the disposition of the heart itself, on its more or less developed capability to resist injurious influences, that the seriousness of any individual case depends. For instance, if there is an encumbrance of the left side, there is much more probability of the disease developing, than if the accumulations are on the right side. A weakly organized heart, perhaps caused by hereditary predisposition, naturally cannot resist encumbrance.

In a case of encumbrance of the heart, we find also the general symptoms of encumbrance. Not only do the surrounding parts show an increased encumbrance with foreign matter, often in the form of fat, but the heart muscles are frequently so permeated and swollen with the morbid matter

that they are quite unable to perform their normal functions. Nor is it necessary in every case that the size of the heart muscles should increase; the encumbrance of the muscular tissues is often shown only in their becoming harder, denser or more tense. In this condition the functional capacity of the muscles is lowered. Everyone knows how, where there is any swelling of the skin, the tension interferes with the working of the entire body. With the heart also, this encumbrance of the muscles exhibits itself in irregular activity. Now, whenever increased exertion is required of the heart—for instance, when we get a shock, or when anything unexpected or exciting occurs, or through severe bodily exercise—that is, where an unusual quantity of blood flows to the heart, we feel very clearly that this organ is not fully equal to the work. There may be *palpitation, anxiety, stagnation of the blood, paralysis, difficulty in breathing,* etc. This is not usually attended by much pain, but a dull pressing feeling, constant or temporary only, is experienced, as though some foreign object were pressing against the heart.

Disorders in the function of the valves of the heart are caused in the same way. When encumbered to a certain extent, these valves can no longer properly perform their function of closing, their surfaces being so deformed by the deposits of foreign matter, as no longer to fit the openings of the ventricles. *A defect of the valves of the heart* may also be brought about by a deformation of the contact surfaces of the ventricles. In either case the cause is the same.

Nervous disorders of the heart are really a most original "invention." As I have already stated in the chapter on nervous diseases, no individual organ can be diseased without its nerves being likewise disordered. It shows a complete misconception of nature and natural laws, to imagine that the nerves can be perfectly healthy and only this or that organ diseased; or that the whole body

can be quite healthy, except the nerves. For me this idea is a thing of the past. We know to-day, for certain, that the various diseases of the heart, with their hundred different names, their different appearances, and their different external symptoms, all have but one common cause: the encumbrance of the body with foreign matter.

But if the cause of the disease of the heart is not got rid of, or if more foreign or poisonous matter is introduced into the body by means of drugs, a worse condition will soon arise: *dropsy* will make its appearance. Dropsy is *always* simply the final stage of other uncured diseases which have preceded it. The water found in the body in dropsy is here wholly a foreign product. It is clear from this that the body is no longer in the condition either to produce normal blood, or to sufficiently purify that which is already there. What is the result? The juices which should produce blood, under the influence of the foreign matter ferment, and thus change form and figure. In no other disease can we so plainly trace the process of the origination and decomposition of matter in the body, and of the changes of form arising therefrom. Some time ago I was consulted by a dropsical patient, whose body was so full of water that it looked just like an expanded rubber tube. The internal pressure of the water was so great that it continually oozed through the skin of the legs, so that everywhere where the patient seated himself he left wet marks. The most remarkable thing about the case was this. The patient was a butter-dealer and had had to sample a large number of butters every day. Now the water excreted through the legs smelt so strongly of butter, that there could be no doubt as to its origin. In the course of time, his stomach had become incapable of sufficiently digesting the quantity of butter which he had, in sampling, to eat every day, without bread or the like. The butter was gradually left less and less digested, finally becoming

foreign matter in the body. The man was accustomed to sleeping on the left side, and here the butter accumulated, quantities of fat being deposited in and about the heart, and more or less over the whole body. The first result was a disorder of the heart, continuing for years. Finally, the foreign matter passed over into a further state of decomposition, and then showed itself as water.

The heart disorder had passed through all stages. At first it was called *palpitation;* then *nervous affection of the heart;* then *fatty degeneration,* soon attended by a *defect of the cardiac valves.* Then *pericardial dropsy* set in, ending with general *dropsy.* The patient had tried all the various methods of cure, and finally, when it was unfortunately far too late, came to me for relief; but he was already incapable of carrying out my prescriptions with full success. He had been treated with all kinds of medicines and poisons, each stage of his disease receiving some new name and likewise some new remedy!

The cause of water accumulating in the body, is a certain gangrenous state of the abdomen, which in most cases is not remarked, because it proceeds so slowly. Only when the water causes the breathing to be laboured and sets up oppression of the heart, is the trouble noticed at all. When the body, however, commences to react against the disease and the patient is able to rally his vital power sufficiently, the chronic disease appears as an acute gangrenous condition. If the disease of the patient is already far progressed, this hot gangrenous state renders him so weak that complete cure is no longer possible, he is internally consumed. If, on the other hand, there is still sufficient vitality in order to enable the system to get the upper hand, it will be able to expel the inflammation from the body. I will illustrate this by here citing two cases treated in my institute.

I once had a visit from a gentleman from abroad, who

had been suffering already for years from dropsy and had got no help from allopathic treatment. The legs were swollen up with water to twice the normal size, and the body also. In spite of this, the patient only complained of difficulty in breathing and heaviness in the legs; he could still walk quite well. I explained to him that his condition was too far progressed in order to admit of a cure, so that I thought it better he should not commence with my treatment at all. The patient, however, insisted upon it, and so he began, filled with hope, despite my attempt at dissuasion.

In the first weeks all went on far better than one could have expected. Profuse sweats and abundant evacutions rapidly diminished the amount of water, so that the patient felt over happy. So far his body had only expelled the product of the disease, namely the water; it now began with the work of getting rid of the *cause of the accumulation of water*. This was the internal gangrene, which had scarcely been remarked. The cure could only be effected by the body in one way: the chronic gangrene must be changed into a hot, acute state. If the body still possessed the necessary vitality, it would expel the foreign matter which had brought about the morbid condition, and a cure would be complete. In the contrary case, the body would be consumed by the internal heat. With my patient matters took the latter course, as I had foreseen. In the third week the change of the chronic gangrene commenced in the right leg. This became more and more inflamed. until at length, from the toes to the middle of the shin-bone, there was an open sore, which already on the second day had become quite black. The gangrene which had formerly been hidden within, was now expelled to the outside, naturally causing the patient much pain. During the fourth week the black matter separated from the sore like a thick skin, and the sore began to heal again. Now, however,

the internal heat of the patient, who was still corpulent, increased daily, a certain sign that transformation of the internal gangrene was still going on. The first result was extreme thirst. In spite of the derivative action of the treatment, however, it did not succeed in mastering the gangrene and overcoming the great heat, as was clarly to be seen from the increasing weakness of the patient. Soon there was no longer the strength necessary for taking the baths, and on the 29th day the patient became unconscious, death taking place on the 30th. This patient died solely in consequence of the intense internal heat, as I had informed him from the first would be the case.

I may now mention a case where there was an altogether satisfactory result. The patient here had been dropsical for a long time; his condition was serious, but fortunately, in consequence of having been treated homeopathically, he had taken but little medicine. Within three weeks, on my treatment, he lost the water, whereupon in the fourth week an intense internal heat was felt, accompanied by remarkable symptoms. On the second day of the fourth week, for instance, there were frequent evacautions of most abnoxiously smelling, yet black fæces, of choleraic or dysenteric character. This continued for three days. None of the family could explain this, as the patient had only been taking very little food. His wife came to me in the greatest anxiety about it, when I explained to her that her husband was now saved, just because of this crisis. The body had thereby not only been enabled to expel the internal gangrene, but also its cause: that is, the foreign matter which had for years been accumulating in the body. The patient, as a consequence of the crisis, was very exhausted and extremely thin, but soon began to recover, improving daily. To-day he is as healthy as he was twenty years ago, and not a trace of water has again shown itself. In this case, the body had fortunately been

able to endure the change of the gangrene from the chronic state into an acute one.

Dropsy is really *curable only* when the patient, while strictly observing my treatment, can *perspire* freely and unaided at the *parts affected by the dropsy*. It is then possible that the water and other foreign matter can be excreted, and a more normal digestion restored. Dropsy is no longer curable when the bodily vitality is so low, that it is unable to expel the foreign matter; it is then, above all, impossible to permanently improve the digestion.

I would here call attention once more to my new method of diagnosis, the Science of Facial Expression*, which offers us a certain means of observing the approach of dropsy many years in advance. Equipped with this new science, we are not obliged to wait until diseases are so far progressed as to be incurable; we can begin a radical treatment at a period when the stage of the disease still admits of a thorough and easy cure.

Proofs of the correctness of the foregoing can be given only by practical demonstration; I therefore submit below an interesting case of serious heart disease combined with dropsy and leprosy.

A gentleman from Batavia, Java, had for 24 years conducted an export business at that place, and had enjoyed during the time, as he said, satisfactory health, suffering occasionally, however, from fever, inflamed eyes, and sores on the legs. These symptoms suffice to inform us that the system was *not* healthy, but heavily encumbered with foreign matter. This morbid matter accumulated first in

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* See **"The Science of Facial Expression,"** by *Louis Kuhne*. **A hand-book of a new system of examination to ascertain the state of the disease, based upon original researches and discoveries. Fully illustrated. Has appeared in German, English, Spanish and Telugu. Price of the English edition, paper-cover 10 s,, elegantly bound 11 s, Louis Kuhne, 24 Flossplatz, Leipzic.**

one part of the body and then in another, and owing to the tropical climate, was more readily set in fermentation than it would have been in our temperate zone. An acute state of disease was thus brought about. For the correctness of these assertions, the further course of this highly interesting case gives us most striking proof. In November 1879 the patient was troubled with a large swelling at the back of the head, near the left ear. This was suppressed by medicinal poisons and forced back into the system; whereupon, after some time, it made its appearance in another form, one of his fingers swelling up and suppurating abundantly, so that even a piece of the bone festered out.

The finger was hardly healed, when there was an abnormal loss of blood through the bowels, a sure sign that a clump of *piles* had burst. Shortly after this, an open sore appeared on the left foot, which remained open and suppurating for a long time.

The patient suffered further from cold hands and feet, *cold* sweats and frequent feverish attacks, all showing the presence of some deep-seated disease. In February 1882, a higher fever than usual set in, which continued serveral days with undiminished violence, so much so, that the family physician, who took the case for one of leprosy, strongly advised a journey to Europe. On April 13th 1882, the patient therefore left Batavia; on arriving in Europe he consulted Professor J., of Basle, who diagnosed inflammation of the blood and sent him to Bad Krankenheil near Tölz, in Upper Bavaria, recommending him to the care of Dr. H. During this treatment a red spot appeared on the patient's right forearm, which remained, in spite of rubbing with corrosive sublimate. On ending the course of treatment, the patient felt somewhat more vigorous; but in the autumn more red spots appeared on his body. The chronic feverish condition thus increased. In April 1883, he set out on his

return to Java, where, in the hot tropical climate, the red spots soon disappeared with the profuse perspiration. On arriving in Batavia in May, a derangement of the heart made itself felt, attended by such high fever, that he again sought medical advice, and finally in May 1885, was once more obliged to go for treatment to Europe for a sonsiderable time.

From the above it is quiet evident, that the cause of the disease had by no means been removed from the system by the treatment in Bad Krankenheil. The fact of the new outbreak of the disease, upon his return to Java, was a sufficient proof of this. Through the sojourn in the cooler climate of Europe, the disease had passed into a chronic, more latent stage. The patient was thus less sensible of the presence of disease, acute outbreaks being now more seldom. The return to the tropics, however, at once caused it to pass into the acute condition again. His physician, nevertheless, had regarded this apparent improvement in health, caused by change of climate, as a sufficient cure under the circumstances.

On his return to Europe, the patient settled in Freiburg, in Baden, devoting himself wholly to the task of getting well, under the advice of the family physician and Dr. N., Physician to the Court. In autumn, the red spots again appeared all over the body, and far worse than in 1882; a sure sign that the encumbrance of the system with foreign matter had still further increased. The doctors, not in the least understandig the nature of the red spots and other symptoms, informed their patient that the cure must be left to nature. A visit to Soolbad Rheinfelden in the year 1886, at their recommendation, had the worst results, however. The disease now gradually became more and more chronic, and the advance of his physical disorder was naturally attended by corresponding depression of spirits. He had reached that condition of chronic misery into which everyone gets, who vainly seeks everywhere for health.

This depression it is which in the cource of *mëlancholy, despondency,* hesitation, lack of courage and *satiety of life.* It is no wonder then that the patient, who during the end of 1888 had been treated by celebrated doctors without success, became deeply despondent. From hopeful manhood he had passed into premature old age, weary, soured, broken down.

Urgent business now forced him to journey back to Java on Jan. 19th 1889. His disease had by this time grown so chronic, that his skin, which had scarcely perspired at all for three years, even under the tropical sun, only incompletely performed its function. On reaching Batavia, the disease took an acute turn. The earlier *affection of the heart* reappeared with increased violence. The fever accompanying it, visibly diminished the patient's strength, and water already showed itself in the legs. Moreover, the Batavian doctors pronounced his disease to be *leprosy,* and were the more disconvinced, since during the patient's last stay in Europe, the most famous European specialist for leprous diseases had covered large numbers of lepra-bacilli in his blood. On account of the great dread of infection from lepers prevailing there, the doctors at Batavia advised their patient's immediate departure, unless he wished to be excluded from all communication with the outer world. On December 19th 1889, therefore, the patient once more set sail for Europe. His travelling companions thought it for hardly possible that he could reach Genoa alive. However, the cooling sea-air stimulated his vital power, and he arrived safely in Europe, where his condition again passed over from the acute state into the more chronic one. His medical attendants at Freiburg gave up the case as absolutely hopeless.

Whilst in this deplorable condition, the patient had his attention drawn to my method of healing, by an old friend of his in Leipsic, who had formerly known him for years

in Java. On March 20th 1890, the patient travelled to Leipsic and four days later, though almost without hope, he commenced my cure.

This case offers a most striking proof of the correctness of my system of treatment, and convincing confirmation of the truth of my Science of Facial Expression. Fortunately, I had this gentleman photographed at the commencement of the cure, and also subsequently, Figs. 1 and 2 being reproductions from the originals. His body was wholly altered by the foreign matter. There was but



Fig. 1.



Fig. 2.

little of the neck, on which a *goitre* had formed, to be seen, it being sunk, as it were, into the trunk, with no proper boundary between the two. Upon the forehead was a large swelling nearly an inch high. The parts around the eyes were swollen up, as also the whole head, which showed a most abnormal accumulation of foreign matter. The calf of the right leg was gangrenous; and there was water both in the foot and ankle, and also above the gangrenous, part, so that the patient could only use the leg with difficulty. The accumulations of foreign matter in the trunk were in proportion to those in the head and neck. The digestion was wholly abnormal. Neither bowels nor kid-

neys properly performed their functions. The heart disorder allowed no rest day or night, and gave rise to a feeling of uneasiness and oppression. The patient's hands and feet were icy cold, and of a dark bluish colour.

Satisfactory results were obtained almost immediately after commencing with my treatment. The digestion soon improved; the bowels, which formerly had only been moved by enemas, and the kidneys, operated regularly from the third day. The urine, previously light and clear, now became cloudy and turbid, evidently containing a quantity of foreign matter. Even on the second day the patient felt himself relieved and fresher, though with a certain sensation of weariness, caused by the energy required to expel the foreign matter from the organism. Profuse perspiration also materially assisted in the cure. A perceptible alteration in the external form of the body was very soon brought about, the more so as the excretion of foreign matter went on most rapidly in his case.

It was interesting to watch how the gangrenous band around the calf disappeared. This was at first dark brown, then bluish red, and was quite four inches broad. It dissolved in the form of water, the leg simultaneously increasing greatly in circumference. The right leg ultimately became enormously thick. This process was remarkable as showing the capability of foreign matter to ferment and change.

The crisis which the patient was now going through was a severe one, but his great vital power stood him in good stead. Although not able to move about much, my baths always made him perspire freely at the dropsical parts, a proof of the power of his body to react. Within four weeks, all the water was expelled from his system. After this the cure went on extremely rapidly. The patient felt younger and fresher every day, and after four months' treatment, attended by some cura tivecrises, was so changed in

appearance (see Fig. 2) as to be hardly recognizable. The heart disease and dropsy had quite disappeared, and were really cured, while despondency had given place to a cheerful and quite different mood, with buoyant spirits.

In Batavia they could not credit this happy result, but wrote that the patient would not be permitted to land in Java, until proved to be quite free from lepra-bacilli. For this reason he again submitted himself to the inspection of the same celebrated specialist for lepra, now staying in Hamburg, who had formerly examined and treated him. After this examination, which lasted nearly four weeks, the patient received the assurance that he was entirely free from lepra-bacilli. This gentleman, who returned to Java in 1892, is still living and in the best of health. None of his former troubles have shown themselves again.

This case affords us another excellent proof of the worthlessness of orthodox medical science, its diagnosis and its system of treatment. Here again, was a patient given up by the most competent authorities, yet by my method of cure saved from death and restored to his family and friends.

Disease of the Spinal Cord. Consumption of the Spinal Cord. Hæmorrhoidal Affections.

THERE is always a long period of chronic sickliness before one of the dreadful diseases of the spinal cord breaks out. By means of the Science of Facial Expression we can, however, determine the result years in advance, can recognize predisposition to the disease, and point to the causes contributing to morbid encumbrance of the nerves. As regards the latter, *pollutions* especially, frequently appear, whether the patient is married or single. But these emissions always denote chronic inflammation of the nerves, particularly of the spiral marrow, and of the *nervus sympathicus,* caused by severe encumbrance of the back with foreign matter. The inflammation always increasing, the nerves become less and less capable of resistance, until the patient is no longer master of his limbs, the legs being generally the first over which he loses control. Together with the pollutions, other morbid symptoms also make their appearance. With many there is a peculiar feeling of constriction about the waist, varying very much, according to the nature of the encumbrance. There is also frequently a slight sense of chill just at this internal girdle or band, as it were. In a more advanced state of the disease there are often also shooting, or sometimes continual, neuralgic pains and *lumbago,* which may be extremely troublesome and painful.

Diseases of the spinal cord are very various in form. With uniform encumbrance, as is the case in these disorders, many other diseases also occur, such for instance as *St. Vitus' dance.*

In a very advanced, the so-called final stage, it is scarcely longer possible to cure diseases of the spinal marrow. In such cases, the most that can be done is to at all events remove all pain from the patient. This can usually be effected in a short time, if the digestion is capable of improvement, so that there is internal quiet, sleep and appetite.

Fortunately, by means of my Science of Facial Expression, as already remarked, it is no longer necessary to await this final stage of the disease. We can commence long before to prevent this, an advantage which cannot be too highly valued. These disorders of the spinal cord in their first stages are as easy to cure as many other insignificant diseases. If, on the other hand, the disease is in an advanced stage, and particularly if it has been treated with drugs, a cure is much more difficult. A house upon which the flames have taken a firm hold, can also not be saved, if once the fire has spread too far.

I have had numerous patients suffering from spinal cord diseases in my treatment, but I have not been able to cure all. Many have had to be content with an improvement, with an alleviation, of their sad condition. The latter have been exclusively such as through long use of medicines, had so far paralysed their body, as to render it incapable of being fully cured, even by the most careful treatment. To elucidate what has been said, I will again produce here some reports of cases which I have treated in my establishment.

The first case was that of a young man who suffered severely from disease of the spinal cord, and was completely paralysed in both legs. For over a year he had been

consulting specialists, without getting any benefit from the treatment. He was unable to make the least movement with the legs, nor could he stand; though only 24 years of age, he was obliged to lie helplessly in bed, or be wheeled about in an invalid-chair. His digestion was the worst possible. The bowels never moved unless with artificial aid, the urine passed off without the patient being conscious of it. When he was placed in his chair, his legs had always to be put into the right position for him.

On coming into my care, he had at first to take four cooling baths daily, and eat only dry, natural food. If during the first month, owing to the debilitated digestion, there was but little improvement noticeable, in the second month one could observe decided progress. After a further two months, the patient was again able to retain the urine, and his legs were so far improved that he could move them a little, and without the help of his attendant could stand for a short time. Nine months of the treatment had brought him so far, that he could walk about the room a little without aid; and in two months more he had regained complete mastery over his legs. His disease of the spinal cord, which had occasioned these complaints, in consequence of the great internal heat produced by the accumulation of foreign matter, was cured, exactly in the same manner as so many other diseases have been overcome.

This case also shows clearly how difficult it is to cure an advanced encumbrance of the back. I scarcely imagined myself, at the beginning of the cure, that the patient's condition could be improved, to say nothing of cured, because the digestion was so deplorably bad, and in the commencement showed no signs of improvement. Only to his extraordinary perseverance, was the subsequent cure due. Had the patient commenced my treatment earlier, such absolute loss of control over the legs would never have occurred, and cure would have been much easier.

Another case which I will now give, is equally instructive. A gentleman in his 47th year had been suffering for several years from consumption of the spinal cord, without being able to get any relief. His encumbrance was very considerable, and he could only walk with much trouble. Frequently, he was attacked by lumbago and other shooting pains. He could not get sufficient sleep, often obtaining no rest at all for days together. The digestion was abnormal, and the general condition bad. The very first months of the treatment had a good effect, the *sleeplessness* being cured and the various pains likewise disappearing. The digestion also improved, although the legs still remained very weak. For this reason the patient scarcely hoped for cure. He had looked uqon the pains and sleeplessness only as special disorders for themselves, and always held to the opinion that they had no connection with his spinal cord disease. As he found it extremely difficult to follow my dietetic rules, he gave up the treatment after ten months. His condition then soon became worse and altogether hopeless.

This patient should have regarded it as a great success, not only that his disorder became no worse during the cure, but that the troublesome accompanying symptoms so soon disappeared. With perseverance the other troubles would also gradually have been overcome.

For a further case of consumption of the spinal cord, see Part IV (Reports of Cures.)

Hæmorrhoidal Affections, Hæmorrhoidal affections generally accompany disease of the spinal cord and the severe encumbrance of the back connected with it. They point to a serious chronic condition of disease, which like all others has as its cause a highly inflamed condition of the abdomen. As a matter of course, the digestion of such patients must also be irregular.

The formation of tumours in the abdomen, a symptom

necessarily implying severe encumbrances, is a proof that the vital and curative power of the body must be very low.

I will illustrate this, also, by an example taken from my practice.

A young man in his seventeenth year, who from his earliest youth had suffered from troubles of digestion, came to consult me. As he related to me, since his eleventh year he had been troubled with piles, hæmorrhoidal affec- and intestinal hæmorrhage, which had caused him much pain. In his fifteenth year, he gradually lost the piles and hæmorrhoidal affections; but, as he further related, he then became a victim to the most dreadful headaches, against which no remedy had any effect. Finally, on the back of his head, hard nodules, the size of a hazel-nut could be seen and felt. His whole head, at the same time, began to change in form and increase in size, the relation between the head and body clearly altering. It was obvious to everyone who saw the youth, that there must be some matter encumbering the head, which ought not to be there, and which was not there before. But no one had any idea that the clump of piles in the body, in a now much harder and compressed form, had entered the head, appearing as tubercular nodules. To any one familiar with the Science of Facial Expression, these symptoms were naturally easy to be understood. The un-bearable headaches alone, were sufficient proof of the presence of a deep cause. Unfortunately no one recognized this. The poor mother saw in her still youthful son, the same dread disease which had carried off the boy's father in his 39th year. None of the methods of cure tried provided any remedy against the disorder. The disease slowly but surely got the upper hand, and the young man, in consequence of the headaches, finally became quite unfit for work, and often had fainting-fits. In this deplorable condition he was brought

to me by his mother. As there was a back encumbrance an outbreak of *inflammation of the brain* was any day to be expected. My prescriptions were strict diet, cooling friction baths, and plenty of exercise, and they were closely followed out with good results. Already in the first week, the headaches disappeared. Only during dispersion of the tubercular nodules in the head, did the pains temporarily return again. The digestion and appetite likewise improved in a most satisfactory manner. A decrease in the nodules, which were to be clearly felt on the head, was noticeable towards the end of the second month of the cure. The nodules in the interior of the head decreased simultaneously, and the head itself became relatively smaller than before. In another two months the nodules had still further decreased, and in half a year there was no trace of them left.

Suddenly a change, apparently for the worse, set in. As his mother informed me, her son felt unwell since the day preceding, the hæmorrhoidal affection, which had vanished years ago, having again made its appearance as bad as ever. I explained to the anxious mother that this was unavoidable. The tubercular nodules in the head had, by the derivative action of the treatment, been conducted from there into the body and had again taken the form of a clump of piles, which, indeed, had been the cause of the nodules in the head appearing at all. Her son had been cured of consumption of the brain by this curative crisis, and in the same way it was now only necessary to free him from the hæmorrhoidal affection, which was but a preliminary stage to the *tuberculosis of the brain.* This explanation cleared up the woman's doubts, and the cure was continued with the most happy results. After a year, the hæmorrhoidal affection had also been perfectly cured and the young man was again healthy.

Further reports of cures will be found in Part IV.

Poverty of the Blood. Chlorosis.

FROM all classes of society to-day we hear the complaint about poverty of the blood and chlorosis. Neither poor nor rich, neither young nor old are free from these disorders, although there is a whole host of remedies in the field. It is the upper classes, supplied with ample medical advice, who use these remedies most, and especially in the form of what is called nutritious diet: eggs, flesh-meat, bouillon, wine and beer, etc.

Modern medical science boasts of the great progress it has made; chemistry and physiology claim to have ascertained exactly the nutritive value of all articles of food, and their effect on the human organism; yet in spite of all this scientific knowledge, the disorders are not in the least diminished, but spread more and more. They produce weakness, debility and nervousness, and lead to abnormal sexual impulse. They prevent a proper supply of milk in mothers, and, in short, they render people mentally and physically unfit, incapable to think or to act. They cause over-sensitiveness, weariness, heaviness in the feet, pains in the muscles. There is loss of appetite, and the bowels no longer act regularly.

What is the position which the medical profession takes up in regard to these diseases? Supported by chemical analysis, the doctors recommend the use of flesh-extracts, said to contain all the constituents necessary for

eruption, quiet prevails for a time, until new tension is caused by the processes of combustion, decomposition and re-formation within the earth. The process is similar in epileptic fits. An encumbrance of foreign matter forms within the abdomen, causing slow, yet constant fermentation, attended by the development of gas, and tension. The seat of encumbrance here being limited in space by the foreign matter, there is a constant increase in tension, assisted by the continual fermentation. Finally there is an eruption, which brings on the fits, and through pressure on the brain, suspends the functions of the latter. When the process of fermentation and the attendant pressure subside, consciousness returns, although the entire body remains more or less exhausted after such a violent attack.

It is much to be regretted that the medical profession is unable to cure epilepsy, and still more so that it does not up till to-day even know its character. Not seldom, it regards this disease merely as a nervous disorder. Little does it think that all these, as it considers them, incurable and mysterious disorders are chiefly its own work: the fruit of misled science, wrong advice as to the care of the health and the use of injurious remedies, such as *potassium bromide*, etc.

The course of cure in epilepsy differs much, according to the encumbrance of the patient. With some the attacks gradually decrease very soon after beginning treatment; with others they at first appear oftener. Owing to the changes going on in the system, such temporary symptoms occur not infrequently, but as soon as the encumbrance is expelled, they gradually, or even suddenly. disappear. They become weaker and weaker, until there are merely *swoons* or *giddiness,* which quite disappear on continuation of the cure. In advising patients, it is therefore well to call their attention to the probable course of the cure. And here again my Science of Facial Expression serves as

an excellent means to foresee those curative crises which may be unavoidable, especially in the case of serious encumbrances.

We thus come to see, that the curability of epilepsy depends solely upon the state of the encumbrance of the patient. In nearly all cases a cure has been effected by my method. Some cases may have been tedious, or even incurable, when the patient's condition was already too chronic; and when the body, particularly the digestion, had been too seriously injured by the customary medicaments, such as bromine. In such patients the nerve-connections, and the brain, have been too seriously distrubed to admit of retrogression. In my establishment I have had some obstinate cases, which have required most careful treatment on my system for years, before the attacks ceased. Cessation of the fits must not be looked upon as always signifying that the patient's encumbrance has been got rid of. For the complete removal of such, a still longer time is often required.

According to the report of the National Medical Commission, for the year 1889, the number of epileptic school-children in Saxony was, at the end of that year, 795, or 13.6 in every 10,000 children. It is therefore much to be wished, in the interest of suffering humanity, that the succesful cures of the New Science of Healing should also become better known in influential and authoritative circles.

I cannot refrain from introducing here, also, an actual case which I have treated, for the purpose of elucidating the subject.

A girl of nineteen had suffered for six years from severe epileptic fits. Every week she had at least two attacks, Her digestion was the worst possible, and her menstruation likewise altogether irregular. Not once since puberty had she had normal periods; sometimes they re-

mained away altogether, at other times appeared too frequently.

By means of my Science of Facial Expression, I found that she was also highly chlorotic, with a disposition to consumption. Her head was abnormally large. The state of the encumbrance was, however, favourable, so that I could assure her of a good prospect of success. In order that she might not mistake the course of the cure, I called her attention to the fact that the attacks might possibly, during the first fortnight, be more frequent than before, but then would gradually diminish, and finally cease entirely. My natural remedial agents did not desert me in this case either. Steam-baths, however, as in most epileptic cases, had to be avoided. In three weeks the patient was free of all fits.

The cure took the exact course, which I had foreseen. In the first days there were two, three or even more attacks. After sixteen days these gradually passed into swoons, and giddness, and finally ceased entirely. Such speedy success was only possible on account of the patient's digestion having fortunately improved with surprising rapidity and the menstruation having soon become normal. In many cases, so rapid a cure is not to be effected. The quick cure here, was to be attributed solely to the very favourable position of the encumbrance of the patient. Other epileptic cases which I have treated, have required two, three, or more times, as long to cure (see Reports of Cures, Part IV).

Agoraphobia is a condition in which the persons afflicted are unable to go across a broad, open space. This disease, also, is simply the result of encumbrance with foreign matter. The condition is due to the inner tension of the body being no longer able to offer sufficient counter-pressure to that exerted by the atmosphere; or, it may be, it exerts too high a pressure on certain internal organs.

The rarer and purer the air, the more is the oppression felt by such persons. I have had patients under treatment, who could only walk close to the houses, without falling down. This comes from the fact, that the air is there always a little more dense than in the middle of the street; and though the difference is very slight, it is still sufficient to be felt by the patient. Wherever the air grows purer and rarer, the patients feel oppressed and disquieted in the highest degree. The inner pressure deprives them of all support.

This disorder, like tuberculosis and cancer, is always a final stage of other preceding diseases, whether it appears directly or indirectly through being inherited. Whether a patient will recover, depends altogether upon his condition and the encumbrance. A radical cure, in any case, can only be effected by my method, which removes the cause. The cure, it is true, often requires a long time.

Epileptic Fits. Agoraphobia.

THAT sudden, malignant complaint which attacks the human organism, those morbid paroxysms, commonly known as epilepsy, which overcome the body—they are but the conclusion of a series of preceding diseases which have been suppressed; or are the result of inherited disorders, too often to be traced to the youthful folly of the father. In the latter case, the treatment of sexual disease with drugs has driven back the foreign matter into the body, with the result that accumulations of such morbid matter have formed in the parents (see p. 188). The transference of this matter to the body of the child, is the foundation of the disease which we call *fits*.

In the course of my practice, I have treated numerous cases of epilepsy with striking success. How often have I seen that sudden epileptic attacks are nothing more than sudden ebullitions of fermenting foreign matter, which has first developed in the abdomen. In many cases these ebullitions of fermentation first pass down into the legs, only afterwards pressing upwards. By the outbreak of fermentation, many persons are first whirled round, as it were, several times, before falling; others, again, as soon as the fermentation rises towards the head, lose consciousness and fall to the ground.

These processes in the body may be compared to the outbreak of a volcano, when the expanding gases und masses, accumulated within the earth, suddenly rush forth. After the

building up and maintaining the human body. They advise a liberal diet; they prescribe pills and powders, quinine and iron in various forms. And what is the result of this treatment? In general, just the contrary of that which was to be attained. The blood becomes still poorer, the patient becomes more chlorotic, and other troubles may set in in addition, the sole cause of which is the unnatural medical treatment. Astonishing though it may sound, it is the fact that to-day we can even find new-born babes suffering from poverty of blood.

These observations bring us to the conclusion, that the modern treatment and diet in these cases cannot be the right one. It must also be admitted, that chemistry is not sufficient to prevent errors when dealing with the processes going on in the living body. According to our experience, artificial extracts of all sorts, and artificial preparations used for the purpose of "feeding up" the patient, are most difficult of digestion, and are often, indeed, not to be digested at all. Foods in the natural form, unchanged by cooking and seasoning, are always the easiest of digestion.

My New Science of Healing teaches an entirely different treatment of these diseases. The external symptoms of anæmia and chlorosis give us no clear idea of their nature. We know that a normal skin never has the pallid colour of an anæmic patient; nor is ever too red, yellow or brown, but always feels *moist* and *warm.* Healthy blood is bright red and thin, even in the veins; blood loaded with morbid matter, on the contrary, is darker, nearly black, thick and half coagulated. In addition, where the encumbrance is very great, the blood vessels are partly expanded, and sacs are formed to contain the largest masses of blood. This expansion sets in gradually, in consequence of the continual tension and inner pressure accompanying the encumbered state. In all chlorotic and anæmic persons, we therefore notice, besides the pallid skin, conspicuously

dark veins. Normal veins, filled with easily flowing, healthy blood, shine but faintly through the skin, at all events never exhibit the blue colour and distension seen in the case of persons suffering from chlorosis. Further, we see in the case fo such persons, a pale, withered inactive skin. which often appears wax-like, and of a greenish yellow colour. In other anæmia patients, again, the face is red and the complexion fresh, but notwithstanding this there is complete incapability, debility and deficient chylification. This condition, owing to the apparent health, is often set down by the medical profession as an "imaginary disease."

In anæmia and chlorosis there is always too great internal heat, with an external sensation of cold. And here we have the explanation of these diseases, which like all other chronic diseases, point to internal latent fever.

*Imperfect digestion*in conjunction with *insufficient activity of the skin and lungs, i. e.* want of good food and air—are the sole causes of these diseases. In consequence of the imperfect digestion, masses of foreign or morbid matter accumulate, causing tension and increased heat in the unhealthy body. In a state of gaseous fermentation, they pass through the whole body and are deposited especially in the extremities, that is directly under, or in the skin. The finest blood-vessels of the skin thus gradually become obstructed, the blood is no longer able to reach them, so that there is not the warm feeling which a healthy skin presents. The skin, on the contrary, appears pallid and withered.

Thus it is imperfect digestion which is chiefly to blame for anæmia and chlorosis. Inactivity of the lungs, with its consequences, is another cause, due in turn, to the want of fresh, healthy air. Unfortunately the fear, forstered by physicians, of taking cold, keeps many people from properly ventilating their rooms, and so admits of the injurious

influences of bad air proving all the more effective. The orthodox medical school well knows, that it is the lungs which by the respiration of fresh air renew the blood; nevertheless, in cases of sickness, the mistake is made of keeping the patient confined to his chamber, and advising him to avoid all contact with the fresh air. But this also, so clearly characterizing the imperfection of the orthodox medical system, is to be explained.

Allopathy, which does not recognize the real cause of disease, makes no endeavour to remove the morbid matter from the body, but only to suppress the symptoms of the disease. It transforms every illness into a chronic state, not observed by the uninitiated, and calls this a "cure". But as we shall see, such a cure is only apparent, not real. Hitherto, unfortunately, no one has possessed a certain and infallible method of discovering these pseudo-cures. Now, however, we have my Science of Facial Expression, which enables every student of the system to recognize whether the cure is real or not.*

When unnatural medicaments are employed for the purpose of curing *bloodlessness* and *chlorosis,* the stomach is burdened with still more indigestible matter and the condition rendered worse. *These diseases can be cured only by expelling the foreign matter from the system, but never by medicaments.* By drugs—including that favourite remedy for anæmia: iron—the stomach soon becomes so weakened, that the patient has no appetite except for strongly seasoned, piquant dishes. Such, however, we are convinced, are as good as althogether indigestible, and operate solely to

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* **"The Science of Facial Expression"**, by *Louis Kuhne.* A hand-book of a new system of examination to ascertain the state of the disease, based upon original researches and discoveries. Fully illustrated. Published in German, English, Spanish, Danish, and Telugu. Price of the English edition, paper-cover 10 s., elegantly bound 11 s. Louis Kuhne, 24 Flossplatz, Leipsic.

stimulate the system, until there is finally no longer any normal appetite at all. Then the doctor will recommend a highly nutritious diet, "nourishing" wines, flesh-meat, eggs, aided by still stronger medicines than before. Then the patient, finding ultimately that his physicians do him no good at all, begins to despair, and only then, unfortunately, when in this sad condition, generally seeks my advice. The first week under my treatment usually suffices to open the eyes of my patients as to the mistakes of the orthodox medical school, and the successful result of the cure converts them finally into enthusiastic disciples of my New Science of Healing.

As soon as the foreign matter obstructing the pores and impeding the circulation, is removed, the blood again circulates to the surface of the body, renews its warmth and restores to it its normal colour and moist condition.

The easily digestible, unstimulating foods, which I advise, are particularly suited for anæmical and chlorotic patients.

I repeat, that fresh, natural air as found *outside*, or in our rooms when the *windows are open*, possesses, like water, the power of aiding in a natural manner the curative crises which Nature causes to take place in our bodies. Unfortunately, our orthodox physicians, on the plea of avoiding the danger of colds, forbid the use of these two important factors, fresh air and cold water—a proof of how little they understand of the nature of colds. Unable, without serious injury to the organism, to effectually combat chills, they endeavour before all things to prevent such appearing, and to this end use the means most suitable for suppressing the reactionary power of the body.

But to anyone who has studied my theory of disease, a *cold* is a quite harmless symptom: it is, indeed, something to be welcomed (cp. page 70). A really healthy person cannot catch a cold, because there is no foreign matter in

his body. Again, a person who is encumbered with such matter, but who lives in a natural way, knows that by a suitable use of cold water, with fresh air and an untsimulating diet, he will be enabled to recover his health. He will thereby attain a hardiness, and inner bodily purity, which he did not before possess. He knows, too, that colds, caused especially by sudden changes of temperature, can only be brought about by the fresh air so strengthening the vitality of the body, as to enable it to produce a curative crisis, which appears in the form of a cold. By means of this crisis the body will be enabled to expel a quantity of the foreign matter. Such a crisis, therefore, so far from doing injury, assists the body to attain to better health.

The treatment of anæmic and chlorotic patients must be adapted to the particular individual, being mild or energetic, as the case may require. Advice exactly applicable to every patient, cannot be given. From the following report, however, the chief general principles may be learned.

A girl of nineteen had been under allopathic treatment for chlorosis since her fifteenth year. Her physician had at first prescribed iron in the form of pills, then as a mixture with pepsine and other medicines. He had further advised her to take only the most "nutritious" food: flesh-meat and bouillòn, ham and eggs every day, with one or two glasses of Hungarian wine; instead of tea or coffee, he recommended good boiled milk. Water, he said, might contain many dangerous miasmata, so he advised her to rather drink some "strengthening" beer. His directions were conscientiously followed for months and years, but without success. The girl's condition at first was bad enough, by the treatment it was made far worse. Her digestion became much weaker, despite the strengthening diet she was literally being starved; she gradually grew weaker, paler and more discontented in mind. She plainly

felt that the doctor's prescriptions did her no good, yet she laid the blame not on them, but on her own system, believing that she was incapable of regaining health. The strengthening food which she ate, passed through her body, it is true, in spite of *constipation*, but afforded no nourishment for the system, since the stomach was altogether debilitated. From puberty her Menstruation had never been normal, being always irregular. Thus, after four years of allopathic treatment. her condition was wholly miserable. Melancholy and weary of life, lanquid, distrusful, and haunted by thoughts of *suicide*, excessively nervous, a burden to others and herself, this poor mistreated girl came under my hands. I immediately changed her diet, giving her entirely unstimulating. easily digestible vegetarian food, prescribing as a beverage only pure water, and recommending besides, abundant exercise in the open air. Further instructions were to sleep with the windows open. and to take three friction baths daily and two steam-baths weekly. In a week the patient's frame of mind was already completely transformed. Her pessimistic and morbid mood had changed to one of joy and delight in life. Within four months both digestion and menstruation had become fairly normal. and the girl was, so to say, regenerated. Her skin which before could not be brought to perspire, now became normally warm and moist. In six months more the girl developed in a truly astonishing manner, and within a year she was completely cured.

Further cases from my practice may be read in Part IV.

Diseases of the Eye and Ear.

BOTH of those important organs of sense, the eye and the ear, are subject to serious diseases. Generally, indeed almost always, these diseases are attributed to influences directly affecting the organs named, without any enquiry to see whether there is a deeper cause. My method of cure, and the experience I have gained in the application of it, leave no manner of doubt, that all diseases of the eye and ear, no matter by what name they may be called, arise from internal chronic disorders. They are either to be traced to such cases where suppressed disease, such as diphtheria, measles, scarlet fever, has left a new exciter of disease, or they may arise from vaccination. My Science of Facial Expression fully confirms this. By its help it can be proved that every ophthalmic or aural disease is accompanied by a corresponding general encumbrance of the body. That is to say, it can be shown that there is an accumulation of foreign matter in the body, having a direct relation to the diseases which make their appearence in the eye or ear.

It is quite impossible, that a person suffering from a disease of the eye or ear, can be healthy in other respects. There must have been foreign matter which made its way to the parts afflicted, before such disease could arise. Such process can be remarked years in advance by the aid of

the Science of Facial Expression. Let us first consider diseases of the ear.

When the foreign matter has passed to the ears, the first result is obstruction of the fine auditory canals. The tympanic membrane is frequently ruptured, or grows relaxed and incapable of vibration, *i. e.* unable to transmit the sound waves in a normal manner. In this way arises catarrh of the middle ear, indicating accumulation of the foreign matter there. It frequently happens with such accumulations, that if the pressure from below is strong, an acute state sets in. Suppuration then often takes place in the internal ear, fermenting foreign matter being constantly discharged outwards, thus causing the well known disease *otorrhœa* or *running from the ear*. If this acute condition is not cured in time in the natural way, still heavier encumbrance, and often even destruction of the organ of hearing is the consequence. This is always worse, the more the disease has been forced back into the system by treatment with drugs.

To anyone who has followed my former explanations, it will be clear that running from the ear, and cold in the head, on the one hand, and gonorrhœa and the whites, on the other, must have a common cause. I maintain that all these various diseases arise simply from foreign matter, which is lying accumulated in the body in a latent condition, passing over into an acute fermentive state, thus forming pus or mucus. The fermenting condition causes an inflammation of the mucous membrane and parts of the body concerned; and this inflammation, in a serious case, may result in open, suppurating sores, or small ulcers. This inflammatory state may be chiefly observed in the inner parts of the body, which have no direct communication with the open air. It is of high importance for us, because it is the surest sign of a severe internal encumbrance of the body; and further, a proof that there is still sufficient

bodily vitality to expel the foreign matter by means of a curative crisis.

In diseases of the eye case is quite similar. The foreign matter fills the crystalline humour in the interior, disturbs it, and thus weakens the power of vision. This is the cause of *myopia* or *near-sightedness*. In other cases, the foreign matter passes into the inner ocular membranes, whence it may come that the yellow spot in the eye, and its nerves, are displaced or covered over, causing the disease known as **black cataract (amaurosis).**

Crey cataract is caused in a similar manner. Over the crystalline lens an opaque film forms, which is nothing but foreign matter that has entered the eye and the crystalline lens. These are conditions which are brought about generally only by very long continued encumbrance, and therefore usually occur only in persons well advanced in years.

Green cataract (glaucoma), extreme tension of the eyeball, is caused simply by the fermentation of the foreign matter in the eye. The representatives of the orthodox medical school, in seeking to cure this disease by cutting out a piece of the iris, only divert the bodily vitality from the necessary task of healing. They mutilate the eye, and yet leave the original disease unchanged. An alteration in the condition of the eye may, however, be brought about by this operation.

When we consider all this, it becomes apparent how purposeless all these eye-operations are, which are directed only to the external symptoms, but never to eradicating the cause of the disease. As long as no new encumbrance of the eye sets in, the operation is regarded as successful. But whenever the foreign matter, as can hardly fail to be the case, undergoes changes in position or condition, the former, or it may be fresh, symptoms of disease reappear immediately, proving the uselessness of the "successful" operation.

Egyptian eye disease. This disease, so common in childhood particularly, is nothing more than the fermentation of morbid matter, generally inherited, by some chance cause coming into a state of violent agitation, producing inflammation. As a consequence, the cure is also a very slow one, requiring the greatest patience. In many such cases, my method has met with the greatest success. The following interesting reports of cures may serve as illustrations.

A little boy of eight took ill of Egyptian eye disease, and was treated by instillation of *atropia*, and operation for four years in various clinics and private hospitals, but without success. The physicians at last decided that the boy was suffering from *hydrocephalus (water on the brain)* and that nothing more could be done for him. His mother therefore brought him to me. By means of my Science of Facial Expression, I ascertained that the abnormally large head, and the *inflammation of the eyeball*, were really the result of a previous, uncured disease. I further explained to the mother, that in this case a cure could only be effected with great perseverance, since the encumbrance was in the back. Every day three to four cooling baths had to be taken and an unstimulating diet observed. Already by the end of a week, the inflammation had subsided considerably, and the boy could now open his eyes a little, which before had been quite impossible. The digestion also was now nearly normal, and the bowels were well open. After a fortnight the eyes were no longer irritated by light. During the fourth week, the child took scarlet fever again, the body having now regained so much vitality, that it could continue the crisis of scarlet fever, which had commenced in the boy's fourth year, but had been suppressed. When the fever passed over the *inflammation of the eyes* and *water on the brain* were also found to be cured.

Double vision is caused by a deposit of foreign matter between the lens and the yellow spot, or directly in or upon the lens or pupil. In curing it by my method, it often happens, that in consequence of the retrogression of morbid matter, and the changes which thus take place in the body, not only double vision, but also a temporary clearness of vision, alternates with temporary partial or complete dimness of sight.

Squinting arises by reason of encumbrance of the rotator muscles of the eyeball. The foreign matter collects, or is stopped in its course, in one of these muscles, thus rendering it firmer, tenser, thicker, and often quite incapable of performing its function. It is robbed of its elasticity, and through the tension ensuing, the muscle grows shorter than the other muscles which lie around the eyeball, and which effect the turning of the eye. In this manner, the whole eye is gradually drawn aside by the encumbered muscle, and so loses its natural position. The orthodox surgeon in such a case severs this little muscle, thus again proving how little the medical profession understands of the true nature of the disease in these cases. Squinting can only be cured in the proper and natural way, by expelling the foreign matter from the muscle of the eye.

As is well known, the optic nerves run together in a bunch and cross each other within the head, so that the left optic nerve passes over to the right side of the head, and the right nerve to the left. It may thus happen that with encumbrance of the left side, the right eye becomes diseased, its nerve being affected by the encumbrance of the left side, and *vice versâ*.

I will not enter into details concerning all the different diseases of the eye, so carefully distinguished by the modern specialist. They have all only one cause: more or less encumbrance of the part in question with foreign matter.

One thing, however, I would point out. The state of the encumbrance of the eye in almost every case being different, it follows that the symptoms will vary. Moreover, by reason of the gradually increasing encumbrance of the human race with foreign matter, new diseases will always be arising. This is why the doctors are never finished with their classification; for new diseases are always making their appearance, each requiring, of course, a new name, and generally speaking, a new remedy.

For us, the difference in the symptoms in the various ophthalmic and aural diseases, is a matter of no significance, We know that for the cure of each of these diseases, there is only *one remedy* which will remove the cause, that is, expel the foreign matter. The remedy is that which has so often been proved to be successful: all the foreign matter must be caused to retrogress on its path, to be expelled. from the body through the natural organs of secretion. For this purpose my cooling baths and an unstimulating natural diet must be used. Often, also, my local steam-baths may be taken with good results, in the manner already described on page 105.

As regards the cure of eye and ear disorders by my treatment, where there has been no destruction of the organs, acute conditions attended by inflammation can be most rapidly cured—often even in a few days. The pain, at any rate, will vanish in this time, and simultaneously the danger of permanent disorder, so that a complete cure will follow generally in some days or weeks. Even when there has been partial destruction of the organs of sight or hearing, an improvement (though not cure) in the condition may be effected in the injured organs, which may thus be retained for life, at all events in a partially serviceable condition.

On the other hand, to cure chronic diseases of the eye and ear, which are generally attended by other serious dis-

orders, more time and often great perseverance is required. Such cases are usually traceable to diseases which have been suppressed when the patients were children. The time necessary for the cure of these chronic cases may be months or years, according to the encumbrance. It is thus to be explained, why in two apparently quite similar cases, with the same treatment, one takes two or three times as long as the other to cure. The reason lies solely in the difference in the encumbrance.

I will again introduce some cases from my practice. Further reports of cures will be found in Part IV.

Eye disease. The patient in the first case, was the son of a business-man in Leipsic, and had suffered from syphilis since his ninth year. The left eye especially was affected, and was threatened with destruction from severe inflammation. The boy was heavily encumbered with foreign matter, as the abnormally large head plainly indicated. This heavy encumbrance was what brought on syphilis, with the accompanying acute eye disease. In the hospital, the disciples of medical orthodoxy had treated the diseased eye with copious quantities of atropia (a very poisonous remedy obtained from the juice of the poisonous stramonium and equally poisonous belladonna), against the use of which I would most earnestly warn everybody. The eye only grew worse under this treatment, new foreign matter being conveyed into it from without, which in itself was enough to weaken the eye. What was the result of the treatment? After six weeks of doctoring with atropia, the eye became totally blind. This caused the father to bring the boy to me. I undertook no local treatment of the eye at all, but simply stimulated the abdominal organs of secretion by means of cooling baths; unstimulating diet being, of course, also necessary. Within a week even, a decided improvement was to be remarked, and in six weeks not only the syphilis, but the eye disorder as well, had completely dis-

appeared. No one was able to tell of which eye the boy had been blind. His sight was perfectly restored and his general health had become better than ever before.

Grey cataract. A lady of sixty had had the left eye operated upon for grey cataract, and since this operation, which had, of course, been "very successful" was quite blind of this eye. For the right eye the same operation was proposed, as soon as the cataract in that eye should be ripe for operation. This case, again, affords a striking proof of the crude state of medical science, its false teachings, its wrong diagnoses; especially characteristic is the deferring of the second operation until the cataract should ripen—waiting till the whole house is in flames! To extinguish the fire at the first, when it is small and can easily be put out—that is a thing which medical science has not yet learned. This patient also, however, after the first operation, had lost all confidence in the orthodox method of treatment, and therefore came to me for cure. Her visual faculty was so far weakened, that she could perceive nothing but shadows, and could not tell even whether a person standing close before her, was a man or a woman. Her encumbrance was very deep-seated, and traceable only to the *quinsy* in childhood, which had not been cured, but simply suppressed. Since that time she had always suffered from *near-sightedness*, cataract being the final result. After following my treatment for a month, she was so far recovered, that she could read large print. Her general health had improved wonderfully at the same time. Her depressed and melancholy frame of mind had changed to hopefulness and cheerfulness; she was, so to say, rejuvenated. Within the first few days her digestion had become much better. The treatment being continued, the eye grew clearer, brighter and stronger from week to week, a thorough cure being effected within half a year.

This surprisingly rapid cure was due to the fact that

there was here a front encumbrance, the back remaining comparatively free. If the encumbrance had been at the back, the cure would have probably required as many years as it here took months. Alas! that the operated eye, blighted by the surgeon's knife, must remain for ever blind

Left-sided blindness, Discharge from the ear, Ringing in the ears. My patient was a gentleman, 37 years of age, who for many years had suffered from a troublesome discharge from the ear, and for the past six months was quite deaf in the left ear. The medicaments he had used had been of no use at all, wherefore he put himself under my care. By means of the Science of Facial Expression, I found that the disease was simply the result of bad digestion. I ordered the patient two or three friction hip and sitz-baths daily, and natural diet; in addition, he was to induce perspiration, either by exercise, or by being well covered in bed, and was to sleep with the windows open. The result was as follows. In seventeen days the running from the ear and left-sided deafness had disappeared, the digestion having greatly improved, even on the first day of the treatment. In another fortnight every trace of the ringing in the ears had vanished; so that the patient had been cured in 31 days.

General difficulty of hearing. A gentleman, twenty-four years old, had had the measles as a child, which in consequence of medical treatment had not been cured. The morbid matter had been driven inwards again, and was the cause, that a chronic state of illness had by degrees set in, including rheumatism, general debility etc. Finally, owing to the pressure of morbid matter to the head, the patient had also become partially deaf. All manner of remedies had been tried by the patient, always in vain.

On the recommendation of numerous acquaintances, he finally decided to try my system. Unstimulating diet, friction hip and sitz-baths and my other remedial agents,

including frequent local steam-baths, were the means in this case too, by which the desired result was obtained in an unexpectedly short time. This was all the more remarkable, as the many false remedies tried had done much to injure the curative power of the system. On the other hand, the cure was aided by the youth of the patient, and the favourable season during which it was made. As the patient has written to me, not only has his hearing again become normal, but his hair, which had been getting very thin, has again become much thicker; the colds from which he suffered whenever there was a change in the weather, trouble him no more. Notwithstanding his not being always able to follow the prescribed diet exactly, and the fact that he has grown somewhat thin, he feels perfectly fresh and equal to work, both physical and mental; his sleeplessness has quite left him.

And all this, again—the underlying cause being the same in all diseases—was brought about in the usual way, without drugs, without operations, without any medical treatment whatever.

Diseases of the Teeth. Cold in the Head. Influenza. Diseases of the Throat. Goitre.

DISEASES **of the teeth.** I have already several times referred to the causes which give rise to all these diseases. Hollow teeth and toothache. of all kinds, are certain signs of a heavy encumbrance with foreign matter. They all arise through foreign matter passing to the head, and generally only with a definite kind of encumbrance, *i. e.* that in which the foreign matter rises from the front and the sides. Neither enamel, nor bone, is hard enough to permanently resist the continual pressure; they soften gradually and moulder just like a rotten branch. The pain then frequently felt, is caused simply by the excessive heat and friction during this process of fermentation. Toothache is sometimes directly provoked by my treatment. It may happen that persons who have never had toothache before, suffer from temporary attacks during my treatment, because with the retrogression of the foreign matter, the teeth are also affected. We find the same thing in rheumatism. To have the teeth extracted is very foolish, and is simply mutilating the body, but never removing the cause of the toothache. My method enables us to cure toothache just like any other disease, as innumerable successful cases prove. Besides the friction baths, frequent local steam-baths for the head (cp. pp. 105—6), always followed by friction hip-baths, will be found most effective. To re-warm the body, a good walk

should be taken, if possible in the sun. In most cases one such local steam-bath, followed by friction baths, suffices to banish the toothache; if not, the baths must be repeated. Anyone continuing my treatment for some length of time, will be troubled by toothache only until the foreign matter has been drawn down from the teeth and expelled from the system.

One point I must not pass over without mention; and that is the matter of cleaning the teeth. A yellowish mucus is constantly being deposited on the teeth, which even takes a hard form, known as tartar. It is only sick, or encumbered, persons, however, as I maintain, who need to clean their teeth. Heathly persons require this just as little as healthy animals. We find that the latter have dazzlingly white, healthy teeth, without a trace of slime or tartar. But where the body is encumbered. that is, in other words, where the digestion is no longer fully normal, there we shall assuredly find mucus and tartar on the teeth, both these being the products of abnormal digestion. The mucus and tartar are simply foreign matter which has risen upward from the abdomen and collected upon the teeth.

The cure of this, and all other diseases of the teeth, can therefore be effected only when foreign matter ceases to form in the system. When teeth are already hollow and decayed, *i. e.* destroyed, they cannot, of course, be renewed; but it is always well to leave such stumps in the jaw. Nature is far more skilful than human art in rendering such a tooth harmless to the system. Teeth which can still be saved, ought to be stopped, so that they may remain serviceable for mastication, as long as possible. At the most, only loose teeth, which are a hindrance in chewing, should be extracted, and if possible replaced by artificial ones. That it is precisely the teeth which soonest decay and ache, is a striking proof of the correctness of my theory of fermentation. The teeth are the only bones which

project from the body and are not covered with muscular tissue. When, now, we remember the peculiar fermentive process which foreign matter undergoes, it is obvious that these projecting bones in particular will be attacked by this process of fermentation. It is always in the extreme parts, that any fermentive process begins most energetically, and the teeth form precisely such extremities. Were they covered with flesh, the morbid matter would first exert an influence upon this.

Cold in the head. This is a slight inflammation of the air passages, and is generally attributed to "catching cold". On pages 70—71, I have already given some explanation of this matter. "Catching cold" can only cause illness in persons who are encumbered with foreign matter; never in healty people. A cold in the head, just like toothache, points to a previous encumbrance of the organs concerned, generally following upon an encumbrance of the lungs. It is, therefore, in a sense, a cleansing process of these latter organs.

By following my treatment, including prolonged stay in the fresh air and sleeping with the window open, colds soon loose their disagreeable character. They take their course quietly, quickly disappearing altogether.

The same is also true of.

Influenza. The great influenza epidemic of 1890 will still be fresh in the memory of all readers. With a good conscience, I can assert, that the numerous influenza patients who put themselves under my treatment, experienced the best results, whether in serious or sligth attacks. The effective working of friction hip and sitz-baths, and of whole and local steam-baths was again thoroughly proved. Naturally a suitable unstimulating diet had likewise to be observed. Bad digestion was the regular attendant of this disease also. It was the true cause, as in other diseases, and was brought about by the accumulation of morbid

matter in the abdomen. In this way, too, we obtain an explanation of the fever which accompanies influenza. After the cooling baths, an astonishingly rapid improvement took place, the foreign matter, brought into a state of fermentation through the change in the weather, being quickly excreted from the system. As rapid, were the cures, which often were made even in one day, without any of the dreaded consequent diseases, which follow upon the use of drugs. (Cp. Reports of Cures, Part. IV.)

Throat diseases. How rapidly diseases of the throat have increased during the last few years, I have occasion to remark, by the great numbers of patients who come to me to be treated for such complaints. The medical profession almost always attempts to cure these diseases by local treatment. This causes the disorder to become chronic, since it can never be aided by driving the morbid matter inwards.

Diseases of the throat indicate an *internal* encumbrance, wherefore it is chiefly pulmonary affections which are accompanied by them. Often, the throat disease may be due to an inherited encumbrance.

The morbid matter in these diseases in fermenting, rises from below, and as the neck is in a sense a narrow pass between the trunk and head, it offers much resistance, so that in affections of the head, the neck must necessarily be the first to suffer. For this reason the character of the neck is of especial significance for the Science of Facial Expression.

The cure of throat affections, whether *hoarseness, inflammation of the throat, of the larynx, or of the pharynx,* or whatever they may be called, depends entirely upon the nature of the encumbrance. The process of cure may last for months, or even years, in chronic hereditary cases. My treatment, however, has met with remarkable success. (Cp. Reports of Cures, Part. IV.)

Goitre. It is a fact, that goitre is most common in mountainous neighbourhoods, and, moreover, generally in particular districts. This remarkable disease is usually attributed to the extremely heavy loads which the inhabitants in mountainous parts are accustomed to carry. It is true, that external pressure on the body—the repeated loading of it with heavy objects—can give rise to goitrous diseases; nevertheless, this complaint has quite other causes. Often, for instance, water exercises an injurious affect—fresh and apparently pure, clear mountain water. In running through masses of earth and stone, it frequently takes up mineral matter (lead, copper etc.) which, even though scarcely to be observed, is nevertheless capable of causing disturbances in the human body, particularly when the water is regularly consumed. This can be explained by a simple observation. If the apparently clear water is allowed to stand in the sun for some time, a sediment will gradually form. This foreign matter if deposited in the body, accumulates in a definite part and favours the formation of goitre.

Naturally, those persons remain free from the disease in whom, by reason of their general individual bodily disposition, the secretion of foreign matter, especially as perspiration, goes on regularly. Where, however, this is not the case, where there is a wrong system of living, or a bad digestion, there the natural excretion of the morbid matter ceases. The indigestible substances in the water cause fermentive disturbances, the foreign matter presses upwards, and accumulates in the neck, causing the malformation known as *goitre* or *Derbyshire neck.* When the goitre forms outwardly, causing the so-called "thick neck," there is no pain, and but little inconvenience from the swelling in front and at the side. The danger in such a case is very small. If, however, the function of the respiratory organs is disturbed by the swelling, the matter is serious. Whilst the

action of water containing many injurious substances favours the formation of these swellings, in the case of people simply living and quietly, it causes nervousness in those subject to mental excitement.

It is an error to suppose that fresh, icy cold, water is conducive to the health. The hardness of the water is sufficient to indicate its indigestible character. Observation has taught, and still teaches us, that running water, warmed by the sun, and rain-water, are the most suitable and beneficial for man's consumption. No tender plants, nor flowers, flourish in hard, fresh water. Such water can only be purified of its injurious, indigestible foreign matter, and thus rendered fit for man's use, by the chemical action of the sun.

Moreover, man is not by nature compelled to drink. A simple, natural diet never creates thirst. Where such, however, arises, fresh, juicy fruits should be preferred to water.

In conclusion, I would supplement the above by mentioning the following case, which I once treated.

The patient, a woman, had had an affection of the stomach for many years. Finally a goitre began to form, which gradually resulted in great difficulty in breathing. On the application of my method of treatment, particularly the use of the friction sitz-baths, the breathing became much less laboured, and in a week retrogression had commenced, the swelling of the skin being considerably softer and diminished in size. In another week there was no longer any trace whatever of the goitre.

Headache, Migraine, Consumption of the Brain, Inflammation of the Brain.

AT first sight it may seen absurd to here set together a number of disorders, between which the medical profession is most careful to distinguish.

I have already stated, that people are accustomed always to seek for the cause of the disease, only where the pain is felt. In the case of affections of the head especially, however, this is a gross error, for such always have their cause in the abdomen. They only make them selves felt in the head, years after having arisen in the abdomen. Those expert in my Science of Facial Expression, are in a position to watch the development and approach of such affections long before they actually appear. Predisposition to migraine in the right or left side, can be ascertàined in the same way years in advance, and similarly with inflammation and consumption of the brain. As experience has sufficiently shown, migraine arises with right or left sided encumbrance of the body with foreign matter, when the latter pressing towards the brain, reaches the head. The most serious head affections, however, such as find natural expression in inflammation and consumption of the brain, arise from a back encumbrance. We always find in the case of persons suffering from affections, of the head, that often for years before, there has been an abnormal digestion, generally expressing itself as *costive-*

ness or *constipation.* Very often we then find hæmorrhoidal affections, piles, and the deposit of nodules of all kinds in the abdomen. To-day, we even find children in this condition. Sometimes the tumours in the abdomen suddenly disappear, and the person will then immediately suffer from affections of the head. The attentive observer will remark in such cases quite definite changes taking place in the head. The tumours which were formerly to be found in the abdomen, now appear in the head, and are much smaller and consequently harder. In many patients these nodules can be seen and felt externally, at the back of the head, on both sides.

The body is not always able to drive the foreign matter in these nodules to the head. If the fermentation is not strong enough, the morbid matter remains at the neck, under the arms, or on the chest, forming nodules in these parts. It must not be supposed, however, that the matter travels from the abdomen through the body in the form of round, firm nodules. On the contrary, the body renders the morbid matter gaseous, volatile and capable of moving from one part to another. According to the laws of fermentation in the body, the foreign matter of the tumours presses towards the extremities, and hence towards the head, without being stopped by any organ in the interior of the body. If now the matter again collects and forms tubercles in the head, we get that state known by the doctors as *consumption of the brain.* Whilst formerly there were only hæmorrhoidal or other tumours to be found in the abdominal region and particularly in the groins, we now find tubercules in the brain. The method by which a cure is effected, proves at the same time the truth of my statements. If the tubercles in the brain are dispersed and brought into a state of retrogression by means of the derivative action of my baths, we first remark a disappearance of these tubercules from the head. We next find them as piles or other tumours

in the abdominal region—that is, in their original form again. And only when these latter have been completely dispersed and secreted, do we find that the affection of the head has been cured. Naturally it must not be assumed from the above, that every patient suffering from piles must have a disposition to headaches, or that every hæmorrhoidal affection must necessarily cause headache. Sometimes I have had patients suffering from piles, who never had had a headache in their life, a circumstance which is wholly due to difference in the encumbrance.

With a front or side encumbrance, the tumours do not so readily travel to the head. If this should occur, however, they will mostly form as nodules and tubercules on the neck and lungs. Such cases are generally more easily cured than where the deposits are caused by a back encumbrance. By means of my new system of diagnosis, the Science of Facial Expression, we are now able, long in advance, to find the path which the tumours or foreign matter will probably take to the head. If, now, there is no obstruction met with and the tubercules once form in the brain, the predisposition to inflammation of the brain is there. When then, by any chance cause, a sudden disturbance (fermentation), or dispersions of theforeign matter takes place, a high fever will be the natural result. In such a case the learned physicians confirm *inflammation of the brain*, but stand by quite helpless as far as cure is concerned. Readers will now clearly understand the connection between affections of the head and of the abdomen. And I maintain that not only consumption and inflammation of the brain have their origin in the abdomen, but all those minor cephalic affections, down to the slightest headache. The only difference is that in the latter case the abdominal affection is less serious, consisting often only in slight digestive troubles. The headache thus soon passes.

It is particularly in affections of the head, migraine,

headache, consumption, and inflammation of the brain, that the success of my system of cure may be so clearly observed. All these diseases it is therefore clear, have one common cause, traceable to the abdomen. It is otherwise impossible that they could at once begin to disappear, when treated by means of my friction baths and diet, without any local application whatever. It is wholly and solely because my method goes to the root of the evil, that such successful cures are made, especially in cases of affections of the head.

How often have I had occasion to observe, that headache and migraine have been cured after one single friction bath, somewhat prolonged. Many ladies, in whom I saw the encumbrance was favourable, have laughed when I have told them that they could expect such a rapid cure. After the bath they were able to understand what before they could not comprehend at all.

Old affections of the head, which have continued for years and have been caused by a severe encumbrance, cannot, of course, be cured so quickly. The foreign matter, has to retrogress, during which process the patient may also have to endure many of the old headaches again. Indeed, not infrequently headache arises as a consequence of the baths, since the morbid matter in retrogressing presses upon the cranial nerves.

As conclusion to the above, I may here be allowed to mention a case confirmatory of what I have said.

A man was suffering, as the physician stated, from consumption of the brain. He had tried the most various cures, but instead of obtaining relief, his state was, if anything, worse. At first he had had severe *headaches*, which had been suppressed by drugs; and his condition had now become unbearable, *consumption of the brain* having developed.

In this miserable condition he came under my treatment. Naturally his digestion was completely out of order, but

soon improved in the course of the treatment. I prescribed several baths daily,the usual natural diet and promotion of the perspiration. Temporary curative crises were in his state naturally not to be avoided, and occurred frequently, particularly when tumours were dispersed. After such crises, the patient always felt extremely well; and finally, after two months' treatment, he was completely cured of his serious affection.

Typhus. Dysentery. Cholera. Diarrhœa.

TYPHUS. Nervous fever or typhus generally attacks persons in their best years, strong, robust people especially falling victims to it. It is one of the most severe fevers, and therefore, at the same time, vigorous curative crises, which there is. It is an universally dreaded disease and with the usual treatment very many persons die of it. The New Science of Healing, however, entirely robs it of its terrible character. It is only when the encumbrance is too great, that it is uncertain whether the system can endure the curative process. But if we succeed, on my method, in making the patient perspire in a natural manner, after the cooling baths, all danger is over. It has frequently occurred in serious cases of typhus which I have treated, that patients who would have had to undergo a medical treatment for weeks or even months, could, after the very first days of application of my cure, take exercise regularly in the open air.

As experience has proved, in all acute diseases such as typhus, influenza etc., my steam-baths are of the greatest service. They must however, be adapted to the condition of the patient, neither being taken too often, nor for too long a time. The friction hip and sitz-baths must naturally be taken concurrently. Typhus, we thus see, resting on the same basis, as regards essentials, requires the same

treatment as all other diseases, naturally with due individualization.

An old adherent of my method once wrote to me that she had treated two serious cases of typhus and *small-pox* with one steam-bath and three prolonged friction hip and sitz-baths so successfully, that the patients could leave their beds and go out. Within six days all traces of disease had vanished, without leaving a single mark.

The course taken by many typhus cases treated by me has been equally favourable. Where the system had been too much weakened and injured beforehand by the use of medicaments, the cure was naturally much more difficult.

Cholera. Dysentery. The same successful results have also been obtained in dysentery and cholera. Both are diseases which cause great disturbances in the digestion, attended by high internal fever. In cholera, as I have often observed, this fever is so high, that the body is internally burned quite black, as may be plainly seen in the discoloration of the lips, nose and eyes of patients who have died of the disease.

Cholera and dysentery only attack those persons whose system is heavily encumbered. It is not, therefore, mere chance that one person catches the disease and another not. I have dealt in detail with cholera and its related diseases in a separate pamphlet, to which I may here call attention.*)

As experience sufficiently proves, all who take ill of cholera, have long been troubled by an abnormal digestion, generally by constipation.

Thus in cases of dysentery and cholera, there is generally also, before the outbreak of the illness, even before

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* See **"Cholera, Diarrhœa and Similare Disease:** their Cause. and their Treatment and Cure without Medicines," by *Louis Kuhne.* Price 6 d. Louis Kuhne, 24 Flossplatz, Leipsic.

there is anything to be remarked, a certain feeling of uneas'ness and heavinesse in the body. This marks the commencement of active fermentation. In my judgement, cholera is the most vigorous cleansing crisis which we have. The foreign matter, set in fermentation by some external cause, such as change of weather, chill, fright, excitement etc., begins a forcible retrogression towards its former starting point, the abdomen, especially as the skin is usually inactive. If the vitality is still vigorous enough, the severe crisis may be overcome, and the patient will become one of the healthiest of men. If, on the contrary, through doctoring with drugs, at one time or another, the curative power of the system has been weakened, the curative crisis cannot be endured by the body. During the feverish fermentive process, whether in the case of cholera, or the usually less fatal dysentery, a remarkable process goes on, such as we do not elsewhere find in the same form. The internal fever heat is nevertheless here usually concentrated only in the digestive organs, so that there is internally a devouring heat and externally a feeling of chill.

In treating these diseases, the first thing is to diminish the excessive internal heat; and further, by natural-means, to make the patient perspire. When the system still possesses sufficient vital power to quickly enough overcome the burning and dangerous internal heat, the cure will be comparatively rapid. On account of the excessive internal fever, many patients scarcely feel the external cold. Such patients are most in danger. In the years 1849 and 1866, during the ravages of the cholera in Leipsic, I watched various cases. I remember exactly the course they took, and am to-day able to explain it. Those patients whose systems brought out the fever to the outside, mostly got over the cholera; whereas all who exhibited but little fever externally, died. For instance, I saw a woman

quietly walking up and down the court-yard with her child at 11 o'clock in the forenoon; at 2 o'clock in the afternoon her corpse was carried out of the house. In her case the system had not shown the slightest attempt at reaction against the cholera fermentation. The woman was naturally heavily encumbered. The black coloration of the lips, eyes and tip of the nose, showed that the abdomen must have been in a dangerously gangrenous condition.

My friction sitz-baths are the best means known of rapidly—and that is here the chief point—curing such severe cases. They also simultaneously greatly increase the vitality. *Abdominal steam-baths* likewise often prove most effective; they must always be followed by a friction sitz or hip-bath. If possible, a sun-bath should be taken to again warm the body till it again perspires. Where sun-baths cannot be taken, the patient must be well covered up in bed in order to induce perspiration. In most cases a few cooling baths are sufficient to bring the patient out of danger. Naturally an absolutely unstimulating diet must be observed.

In cases of dysentery my baths in conjunction with my other remedial means, likewise act most effectively. Often only a few friction sitz and hip-baths and a single steam-bath are sufficient to cure diarrhœa.

If, however, this is not sufficient, the following means should be used; indeed, in severe cases it is better to adopt it at once. Heat a brick, wrap it in a woollen cloth and lay it under the anus. It is surprising how quickly the evacuations are stopped in this manner. After some hours a friction sitz-bath should be taken and then the hot brick again applied.

By this means it is often possible to save patients who would otherwise have been lost.

Those who have successfully withstood such severe crises always feel particularly well. In fact it is a universal

experience of all those who have recovered from cholera, that they feel as though they had been freed from an oppressive burden: for the whole of the former load of foreign matter has been got rid off. The Science of Facial Expression shows us the striking decrease in the encumbrance; it is, indeed, often quite remarkable, how in so few days the condition of the body may quite change.

But since cholera is always a dangerous curative crisis, one will always do well in paying the chief attention to avoiding catching the disease. Unfortunately hitherto it has not been known what step to take in this respect. Only through my discovery is it now possible to determine every encumbrance, even the most dangerous and unfavourable disposition, which under certain circumstances may occasion curative crises such as cholera.

From British India and Further India, I have received most favourable reports during the last few years, as to success of my method in cholera cases. In conjunction with my baths, in order to guard against such diseases in tropical countries, an unstimulating, unheating diet is of special significance. It has a remarkable effect on acute fevers, such as in cholera, dysentery etc. Persons living in those countries, therefore, need have no fear about introducing such a diet, if it is not, indeed, already being followed. Let it only be tried! (Concerning dysentery, see Reports of Cures, Part. IV.)

Diarrhœa accompanied with vomiting, common in childhood, is also nothing more nor less than cholera. It is generally only those children who have been brought up with the bottle, and therefore burdened with foreign matter, who suffer from it. The treatment should be the same as in cholera; only the child will be easier caused to perspire by being taken into the father's or mother's bed.

Also ordinary

Diarrhœa is really only dysentery an cholera on a

less extended scale. I have for years remarked that vigorous persons often have periodical attacks of diarrhœa.

Diarrhœa, no matter how slight, is nothing other than a more active attempt of the system to effect a cure, and is thus always a favourable sign. It must, therefore, be looked upon as a fortunate occurrence, provided it does not continue too long. Such crises are probably actively supported by the recently discovered power of the electric tension of the air. Everyone who experiences such crises feels afterwards actually rejuvenated. We thus see how the body of itself periodically seeks to rid itself of its encumbrance.

Although *diarrhœa* and *constipation* appear as opposite extremes, no reader must wonder if I describe them both as simple disturbance of the digestion, called forth by abnormal internal heat, caused by over-nutrition. Just as the same cause may make one person stout and corpulent, another thin and lean, so it may cause in one case diarrhœa and in another constipation.

If obstinate constipation does not give way to the friction baths, one should try to evacuate the bowels in the open air, especially in a wood. It is surprising how the fresh air acts upon the body, so that what was impossible in the dark closet, is easy in the fresh air.

Climatic and Tropical Fevers, Malaria, Bilious Fever, Yellow Fever and Ague.

WHATEVER name these fevers may bear, and under whatever form we may meet them. the reason for their outbreak and development is always the same, the fermentation of foreign matter. When we remember the climatic conditions in the tropics and the enormous differences of temperature between day and night, we can understand at once the reason for the severity of tropical fevers, the intensity of which increases proportionately to the more rapid and powerful fermentive processes. It is in hot climates that we find all the most favourable conditions for causing an outbreak of severe fever, even in those cases where the body contains comparatively little foreign matter. In the temperate zones this is never seen in like degree. Naturally, tropical fever occurs in various forms. Yellow fever is that most feared. It owes its name to the yellow colour which the skin gradually assumes in course of the illness—often, perhaps, only as a consequence of the drugs employed. The first symptoms are: Weariness, headache, griping pains, thirst, and dryness of the skin. Afterwards the fæces become black, and the patient vomits black masses; the whites of the eyes become yellow, and then the skin assumes the same colour, often, however, only after death.

The main point is, to prevent the disease ever making its appearance. We have the means always at hand. First, a very moderate, wholly unstimulating non-flesh diet, selected from the products of the country in question; secondly, a thoroughly natural manner of living, together with the use of my friction baths. Even though in the tropics one cannot obtain water for these baths so cold as one can in the temperate zones, the relation of the temperature of the water to that of the air is pretty nearly the same. Moreover, the same heat which has given rise to the fermentation (disease), likewise favours the process of cure, since in those lands the re-warming and perspiring after the baths, ensues more rapidly than in temperate zones. It will never be possible for medical science, by means of *quinine, antipyrin* or other means for paralysing the nerves, to really cure any fever whatever. When a weak dose of the remedy has done its work, a stronger one will have to be given; and finally the repeated paralysing of the nerves will cause the most severe diseases—serious nervous complaints, which are then all the more difficult to cure.

In all tropical countries, my treatment has been tried with the best success in such fever cases, according to the rules laid down in the present hand-book. A Mr. R. of Batavia, writing to me from Genoa, remarked among other things:

"I have just learned that my wife and my book-keeper in Batavia (Dutch East Indies) to whom I sent your book, have also employed your treatment with extraordinary success against the climatic fever prevailing there."

The Rev. Mr. M. of P. L. (Brazil) wrote to me under date December 16th 1890 as follows:

"As for myself, I can gratefully inform you that by the employment of the baths prescribed by you, the climatic fever and my digestion have in a very short time decidedly improved. We have some trouble with the diet in this

land of coffee, where instead of wheatmeal, we have to be content with maize bread; instead of German vegetables, our beans and rice, manioc etc.; instead of pears, apples, and plums, our bananas, sweet potatoes, melons, oranges, figs, dates, chestnuts, and the like."

The following is excerpted from a letter, written in 1891, from one of my numerous disciples on the Gold Coast and in Cameroon, Mr. J. S., a missionary, of B., Accra, Gold Goast:

"As far as possible, guided by the publications sent us, we have tried to apply your treatment in fevers, especially in *bilious fever.* We are happy to be able to report, that your method greatly mitigâtes the attacks of fever that occur so frequently."

From a letter which I received from Mr. M. H., I extract the following:

„Stann Creek near Belize, British Honduras, Central America, July 3rd., 1890. Having received your hand-book, 'The New Science of Healing', I beg to thank you for your kind *letter of advice,* which I have followed as far as existing conditions permit. Every year I have had to fight our *tropical fevers, ague,* and other disorders—this year *I have remained free from all these troubles, by the employment of your method of treatment.*

In a long letter to me from Otjimbingue (Hereroland), South-west Africa, Mr. F. M., after describing the serious illness of his wife, which was held to be incurable, wrote: "None of the remedies which I had tried during 30 years could check the progress of the disease. The digestion was also utterly prostrate. Then came your letter, and opened my eyes. Now my wife takes friction baths. The *malaria fever.* which had recently been added to her other complaints, has already *disappeared,* the *swelling of the feet is subsiding,* and the *fingers are growing thinner and suppler.*"

Mr. G., a missionary at Dar-es-Salaam (East Africa), who had followed my method of treatment in his own case

according to my hand-book, reports in the "Nachrichten aus den ostafrikanischen Missionen", Berlin, September 1890, concerning the good effects of the treatment in his nephew's illness:

"Sunday, June 22. 1890. Last week my nephew, Daniel E. was also ill for five days with *violent malarial fever; neither quinine, nor antipyrin, nor antifebrin, nor peppermint tea; nor yet compresses* according to the old Nature Cure method, *afforded any relief.* The fever remained at the same height, or even rose a few degrees. Yesterday noon, after all our exertions, our resources were at an end. Only one thing could save the patient—change of place and air—but how? In this extremity we bethought us of the new Nature Cure method of Louis Kuhne of Leipzic, whose book, 'The New Science of Healing', I had just had sent out. We placed the patient, glowing with fever heat, and unable to perspire, into water, *i. e.* administered a friction hip-bath lasting three minutes. As soon as the thermometer rose above 102° Fahr., the bath was repeated, and we soon observed that the fever was *beginning to abate. Overnight improvement set in, and in the morning, perspiration came quite naturally.* Thus he was saved in a few hours by this simple process."

Had the friction baths been continued for 20 minutes, instead of only for 3 minutes, improvement would have taken place still more quickly and surely. The longer and more frequently the baths are given in such cases, the better and more advantageous they are for the patient.

On his own case, Mr. G. of Dar-es-Salaam wrote to me on December 22nd last as follows:

"Not to repeat what I already wrote you respecting my cure of various climatic fevers through your method, I will only mention briefly that your water cures have had most surprising results in my case. I now employ them with the natives (naturally, with a great deal of trouble

and sacrificc of time), and the results have always been good.

"Since last June, I have used no medicines either for myself or my family; nothing but water, according to your instructions. We are in the best health possible in tropical regions well known for their unhealty character. Would not this water-cure method of yours be a good remedy for *'yellow fever'* in West Africa?"

Mr. G. has apparently not fully grasped the idea of the unity of disease—of the uniform interrelation of all diseases, otherwise he could hardly have put this question.

Mr. A., a missionary at Kwala Rongan, Borneo, wrote to me under date January 20th 1892:

"Dear Mr. Kuhne,

"I possess two copies of your hand-book, 'The New Science of Healing', and cannot refrain from expressing my thanks to you for the good results of the New Science, which I have experienced in my own case, and in that of others, here on the island of Borneo. It will soon be a year since I first heard of the New Science of Healing, here in Borneo. Shortly afterwards, as I was one day at a friend's I had a severe attack of Indian fever, which rendered me quite incapable. Thereupon, I tried your new method. First I took a steam-bath on a cance-seated chair, and then a friction hip-bath, according to the directions contained in your hand-book. The effect was astounding: after the bath I was even able to leave my bed, which before had been impossible. My friend and his wife were equally astonished at the rapid success. Since that day I have been a strong adherent of your system. I have also seen the best results from the New Science of Healing in the Dyaks here. The Dyaks, who have no physicians, have made use of steam-baths from the most primitive ages, they are not acquainted with the friction baths, however.

"Were I to relate you about all the patients whom I have cured by means fo the New Science of Healing, I should have to write too much. Your book, dear Mr. Kuhne, is *the* book for a missionary in the wilderness, and it never leaves one in the lurch. The other doctor-books which I have, always direct one to call in a physician. But how is this going to be done in the wilderness! I am too thankful to possess your text-book of the New Science of Healing. About three weeks ago, I was called to a woman whose hut in a rice-field had been burnt down in the night, and she had not waked up until the fire had reached her body. The woman presented a dreadful sight, particularly the face and arms. I immediately ordered wet packs from morning to evening; and in the evening I applied them as directed in your book. The next day I again applied the packs, and in a week she was quite well again; with the orthodox treatment by inunction, I belive it would have lasted weeks, may be months.

"Some weeks ago an *eruption* broke out on my left hand. Here they call it 'Kihis'; it is a very obstinate rash and forms in rings round the body. Formerly I have always driven it off by ointments, but it has always returned again. One time it would be on the feet, neyt on the face, then on the back, and next time on the hands. Now when I saw the eruption appear this time, a few weeks ago, on the left hand, I said to myself: well, this time I'll drive you off by means of the New Method of Healing. I there fore first took a steam-bath, followed by a friction hip-bath; the next day, only two friction sitz-baths. On the third day of the cure, I remarked that the eruption looked wrinkled, so that it was evidently about to disappear. Also I have steamd the hand alone, and then taken a friction sitz-bath on each occasion. Now, on the left hand, on the affected part, two little ulcers have formed, so that I believe the foreign matter is drawing together here.

When they are healed the dreadful itching will be gone.

This is the way to get rid of the dreaded Kihis.

I shall always use the *New Method of Healing, for till to-day I have found nothing like it.* I endeavour to get my friends to give their attention to the New Science."

From West Africa, Australia, Hither India, The Cape, West Indies, etc., I have received numerous similar letters, relating the successful cures made by means of my method —many accompanied by warm expressions of thanks.

Lepra, Leprosy.

OF lepra, that scourge of the tropices, we can in our temperate climate form but little conception. Those afflicted have always been doomed to death, there being no known remedy against the disease. Shut off from all communication with the rest of mankind, generally confined on an island or in a special hospital, they were left to await their dreadful end. For fear of infection, all lepers are taken from their families, banished from their homes, and left almost to themselves in some remote place. At the most, food is brought to them from time to time, but otherwise all contact with them is avoided.

In temperate climates lepra is seldom found. The same causes which in the tropices induce lepra, in the temperate zones bring on especially gout and dropsy. Just as the date-palm flourishes only in the tropices and the oak in a temperate climate, although there is the same sun, the same water, the same earth, so also is lepra a product of a hot climate.

We distinguish between wet, running lepra, and dry lepra. In the former, there is a gradual decomposition of the body going on, often for years, accompanied by dreadful torment. The disease progresses uninterruptedly until, when it has gone too far, death comes as a release.

In dry lepra, as in the former kind, there is an increasing disturbance of the digestion accompanied by the

gradual formation of dark gangrenous spots at the extremities, especially on the hands and feet—a certain sign of a very high internal fever. The flesh then begins to disappear, at first at the finger joints and then on the remaining parts of the body, until only the bare bones and joints are left. The body dries up precisely like a tree, and resembles a mummy. The bones and joints often appear more or less enlarged. The flesh continues disappearing, until the unfortunate resemble sufferers mere skeletons, and die of exhaustion.

The cause of lepra is, of course, the same as that of all other diseases; the encumbrance of the system with foreign matter. It may be inherited; or, it may be acquired through an unnatural mode of life. The true seat of the disease is in the abdomen, or in the organs of digestion, which are in an abnormal condition. The great heat in the tropices, which aids all processes of fermentation, naturally causes most rapid decomposition of the foreign matter in the system. This foreign matter is forced with great energy to the extremities, where it accumulates in firm masses on account of the internal pressure. By such excessive accumulations, the nerves—the transmitters of life—leading to these extremities are quite obstructed, so that they no longer perform their function. This accounts for the insensibility of the limbs in lepers. Such patients suffer from a high internal fever heat, whilst externally there is a certain feeling of chilliness. In dry lepra the extremities are literally dried up by this excessive inner heat, since owing to the weak digestion, in spite of the usual so-called nutritious food, it is impossible for the patient to be really nourished. The food, it is true, goes through the body, but the patient starves in spite of all that he eats. Here, again, we plainly see that it is not what one eats, nor that which contains, according to modern views, all the substances of which chemical analysis shows the human frame to be

composed, which nourishes and sustains the body, but only such food as the system can still really digest. In wet lepra there is decomposition similar to that in dropsy. For here likewise, as experience shows, the formation of water is preceded by an internal gangrenous condition which often lasts for years. The decomposition, therefore, may in a sense be regarded as the final stage of the processes going on in the living body. Furthermore there is in wet lepra also a watery decomposition, though differing in form from that in dropsy. The course of disease in the case of a patient from Batavia, who was, as already mentioned, affected with heart disease, dropsy and lepra, simultaneously, is therefore very interesting, as most clearly exhibiting all these morbid processes. Although lepra does not occur with us in the same form as in the tropics, we can, nevertheless, sometimes observe cases very similar. Consumption in particular, is much like it in character; only in this latter, the system does not always, especially in colder regions, force the foreign matter into the extremities with such intensity as in the case of leprosy in a hot climate. The foreign matter begins already in the interior of the body to ferment and destroy the lungs or other internal organs.

As regards the cure of lepra, medical science candidly confesses that it knows no cure. It does not know the nature of fever, and does not regard lepra as a febrile disease. Lepra can only be really cured when the fever is attacked and the foreign matter driven from the body. When this is not possible, a complete recovery is not to be expected — an improvement in the condition is the most that we can attain.

The drug treatment only occasions still greater injury to the system than the disease itself. There can be no more striking proof of the correctness of this statement, than the report of the cure of the Batavian patient referred

to on pages 219—221. We here see that the inactive lepra bacilli in this patient, the presence of which was ascertained beyond doubt by a specialist, could in no wise be got rid of by the remedies he employed, neither by poisonous medicines, nor by any other means.

Compare with this the brilliant success attained by means of my system, which absolutely eradicated, as confirmed by the same physician, all the lepra bacilli. Cure can be attained in this disease only by means of unstimulating diet and my friction baths. Naturally, however, patients can be cured only where the digestion and activity of the skin are capable of improvement and where vitality is sufficient.

With my method it has also been clearly shown, that all danger of contagion by lepers is excluded. This is of the highest importance, particularly for those who dread infection. It is only necessary to follow a natural mode of living, and strengthen and invigorate the whole body by means of my system of baths, which cleanse the system from within of all foreign matter. They will then not only be safe from all danger of infection, but will promote their general health, and physical and mental capacity in every way.

How little the medical profession knows to value natural curative means, is seen from the way in which the doctors so carefully confine their patients in sick-rooms with closed windows, taking the greatest pains to keep away all fresh air, particularly at night. It is thus naturally unavoidable, that the air in sick-rooms becomes permeated with the exhalations of the lepers, and with fermenting morbid matter, so that it is no wonder if the lepra proves contagious in *such* cases.

Before I proceed to cases of cure of lepers, I will here briefly describe the manner in which everyone can surely protect himself against lepra, and all other diseases, *e. g.* malarial and climatic fevers; at any rate, so that in

the worst case, the course of the disease will be attended by no danger at all and with but little derangement. As said before, it is only such persons as are predisposed to these diseases, that is, who are heavily encumbered with foreign matter, who can be attacked by them. Any exciting



Fig. I. (15 years of age.)

cause acting upon the accumulation of foreign matter, causes renewed fermentation (curative crisis) and endangers life. The predisposition to such disease can be recognized years beforehand by the aid of my Science of Facial Expression. But even those who have not studied this science, are able to experience this predisposition to a certain extent. Our all-wise mother, Nature, has provided us with

a sure means for this purpose—of which, however, most people, unhappily, do not understand the use—our *instinct*. Natural instinct instils into all who are encumbered, provided they still stand in harmony with nature at all, an involuntary dread, a secret horror of infection from such diseases.



Fig. II. (13 years of age.)

After these general remarks, I will now describe the course of lepra in the cases of three boys, who after having been given up by the medical authorities in Berlin and other cities, came under my treatment.

The treatment of these boys (aged 9, 13 and 15 respectively) afforded me an opportunity of proving the superiority of my method, the more so as the orthodox physicians had confessed their absolute inability to cure.

As these cases might excite public attention, I had seven photographs (see pp. 278 – 284) of the boys taken.

The state of the poor children, when I began their treatment, was deplorable in the extreme. On the hands, the tips and even the second joints of some fingers had rotted off. The remaining stumps of the fingers were much



Fig. III. (9 years of age.)

swollen and nearly ready to fall off, as Figs. IV and V show. The forefinger of the right hand of the youngest child was already rotting away. The feet of the two elder brothers were in a still more horrible state (Cp. Figs. VI and VII). They were mere shapeless masses, surcharged with foreign matter. In several places corrosion had already taken place, and from the sores, which went right down to the bone, there was a discharge of pus. The hands

and feet, arms and legs, as far up as the elbow and knees respectively, had already lost all sense of feeling. One of the Berlin physicians, in order to ascertain the degree of insensibility of the members, had with a long needle pierced the hand and up the arm to the place where pain could be felt. This was found to be at the elbow. A truly remarkable achievement! The boys' condition was so wretched, that photographs could not be taken until after three weeks' treatment, when their state had already essentially

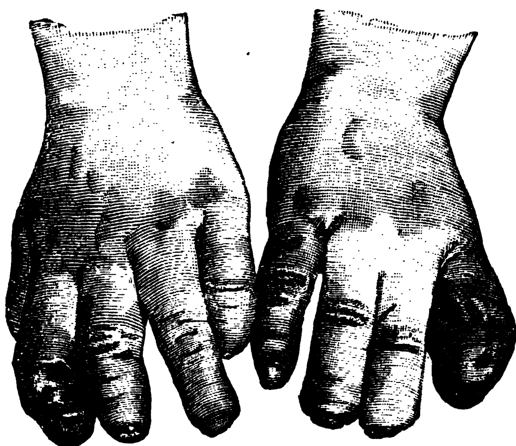


Fig. IV. (Hands in Fig. III.)

improved. It was quite impossible to illustrate the worst stage of the disease.

The cure consisted of two or three friction sitz-baths daily, with frequent friction hip-baths, natural diet, plenty exercise in the open air and the promotion of perspiration. The effect in this case also was remarkable. Although at the commencement of the cure the exhalations of the children were horrible enough, during the treatment they were absolutely unendurable, smelling strongly of decomposition. For the bad matter in the body being set in motion,

strove to find an exit. This was notably the case during the baths.

Breakfast consisted of dry wholemeal bread with a few apples; and dinner: of farinaceous foods, vegetables and pulse, boiled only in water, with but little butter and salt. All flesh-meat, bouillon and the like were naturally prohibited. The food was boiled as thick as possible and always eaten together with wholemeal bread. Fresh water was the only beverage.



Fig. V. (Hands in Fig. II.)

Within a fortnight the running from the open sores on the feet ceased, and began to heal from within outward. In the case of the two elder boys, each had still a large sore which did not heal over till during the course of the following month. The hands also underwent a remarkable change during the cure, especially the fingers, which began to get thinner even during the second month of the treatment, as might be plainly seen by the folds formed in the skin. The foreign matter now commenced retrogression towards the abdomen, in just the same manner as that in

which it had formerly forced its way into the extremities. This, the patients felt distinctly by the drawing pains in the hands, arms, feet, and legs, and especially in the joints.

When beginning my treatment, the oldest boy could not even wear the shoes which had been specially made for him. After four weeks treatment, however, he was able to wear ordinary leather shoes. The normal sense of feeling, finally returned into the previously insensible members.

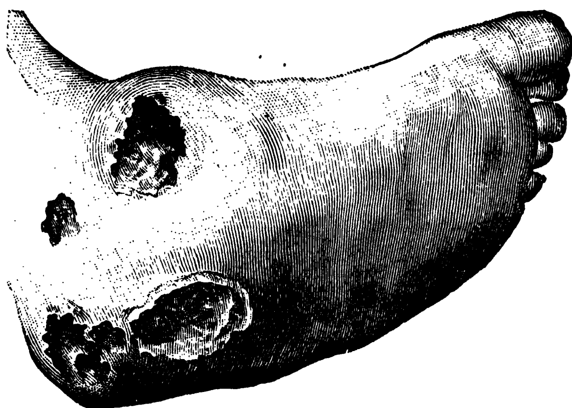


Fig. VI. (Foot to Fig. I.)

Naturally this result was only possible owing to the digestion having improved.

On coming to me, the boys had scarcely any appetite at all, but within a week after commencing my treatment, they could hardly get enough to eat. Their digestion was, as it were, revivified.

Thus the condition of these three boys was already such as was not to be compared with their former one. The miserable children, dromed to certain death, were now happy and cheerful.

At any rate these cases show that lepra though commonly believed to be incurable, can be cured by my method



Fig. VII. (Foot to Fig. II.)

of treatment, as has also been proved by the recovery of the patient from Java, referred to on pages 219—221.

Without hesitation I can positively assert, supported by the succesful results obtained, that lepra also has the same common cause as all other diseases. Only those lepers cannot be helped, whose disease is alrealdy too far progressed, *i. e.* where vital organs have been destroyed. To such unfortunate creatures, however, my treatment will at all events bring relief, and admit of a peaceful and easy death.

Scabies, Worms, Tape-worm, Parasites. Intestinal Hernia.

HERE again we have classed together a number of diseases which, however much they may differ as regards external symptoms, have still the same cammon cause. This assertion I make, supported by incontrovertible proofs, viz. the cures attained in such cases during my long practice. When we set about the cure of scabies and the related parasitic diseases, we have first to get a clear idea of how the itch-tick breeds and what is its nature.

It is a well-known fact that a single warm day in spring — that season of the year where nature develops the greatest vitality—is sufficient to bring forth a myriad caterpillars on the young green leaves of the trees. And much as we are concerned at seeing the beautiful, fresh leaves eaten up before our eyes, we are powerless to prevent it. Then follows a cold night and all the parasites have vanished entirely, as suddenly as they appeared. In a single night, by a fall in temperature Nature has done that which for us it was impossible to bring about. And all parasites are subject to the same natural laws.

From these observations we must draw the conclusion that the *itch-tick, worms, lice* and other *parasites* can only exist where they find a suitable nutritive medium. Such, however, can only be found in the body which is diseased, that is, encumbered with foreign matter. Further-

more, the capability of existence of such animal life is dependent upon a definite high degree of temperature, which, as experience everywhere shows, is only to be found in organisms which are encumbered with morbid matter. Should we succeed in reducing the abnormal temperature again to the average one, and at the same time in expelling the morbid juices from the system, the possibility of the parasites existing longer is at once cut off and they accordingly rapidly vanish.

It will be clear to anyone who has attentively followed my explanations, that the only way to diminish the internal temperature is by means of my cooling baths, an unstimulating diet and my other now well-known prescriptions. Of course, according to the extent of the encumbrance, these must be adopted to meet each individual case. Thus from the stand-point of my New Science of Healing, since these peculiar diseases, have the same common origin as all diseases in general, the same uniform cure must here apply, which has never yet failed in other disorders either. Treatment with medicines only brings further injury to the organism.

I may here be permitted, again, to illustrate these dry facts by some interesting examples.

The first case is that of a gentleman who was suffering from *intestinal worms* of various kinds. Naturally this disorder was accompanied by nervous and digestive troubles, which had brought him to the brink of the grave. Internally he was being, so to say, consumed; and his excrements were infested with little worms. Yet my method brought him relief. In the second month, already, the cause was removed and hence the worms disappeared. And as the patient continued the cure, his state was soon changed from that of chronic disease to one of vigorous health.

Only by diminishing the internal temperature, and thus expelling the morbid matter, was it possible here to stop

the internal fermentive process, which had caused the worms. This was most readily affected by means of friction hip and sitz-baths, the promotion of perspiration and unstimulating, uncooked food.

Another case, one of *scabies*, may be here mentioned, as characteristic of the orthodox medical treatment. On account of the disease mentioned, the patient, 17 years of age, had been treated without success in various clinics and hospitals. Finally, one of the professors ironically advised him to go to me, as he had no remedy. In his sore need the patient took the advice, no doubt seeing that nothing was to be expected from the drug treatment. His hands and arms looked horrible. By means of my Science of Facial Expression, I ascertained that this patient had been suffering for years from a chronic abdominal disease, brought about by weak digestion. The morbid juices and impure blood thus produced, naturally formed an excellent nutritive medium for the scabies. The itch-tick may very well be compared to a bacillus, which thrives wherever there is decomposition. Without an appropriate nutritive medium it cannot exist at all.

Here again, friction hip and sitz-baths, natural diet and frequent steam-baths proved an excellent remedy, The digestion soon improved, the itch decreasing simultaneously, being deprived of its nutritive medium. Microscopic examination clearly showed that the itch-ticks were being destroyed. Within three weeks only a few isolated ticks were to be seen, and in the fourth week not a trace of them was left. The patient's features had quite changed; one could hardly recognize him again, so greatly was he altered. The patient's nature had of itself done that which all the art of the state-diplomaed doctors could not do. And this was all effected by the same process as before, without the application of medicaments and without surgical operation.

Intestinal Hernia. The cause of intestinal hernia is a morbid internal encumbrance of the abdomen, accompanied by extreme tension. At those places on the peritoneum, where the slightest obstruction is offered, the intestines, in consequence of the great internal pressure, tear the peritoneum and protrude. The exact place where this rupture occurs is very different in various cases, but the cause is always the same. It is therefore an error to seek such cause in a blow, a fall, or the like. They may certainly be the immediate means of producing a rupture, but can never be the true underlying cause. By applying my method and thus expelling the morbid matter from the body, such ruptures are again cured. Wearing a truss, which is quite insufficient to remedy the complaint, is then wholly unnecessary.

In the case of this trouble, too, my method of treatment has met with the greatest success; my doctrine of the unity of disease, it is again seen, never leaves us helpless, Within what time a cure may be effected, depends, of course, upon the degree of encumbrance, and whether the rupture is already an old one, or not. Moreover, the cure in the case of an old person, where bodily vitality is already low, will not be so complete as when the patient is still in youth.

Cancer, Proud, Flesh.

CANCER, that terrible and so universally dreaded disorder, cannot with right be attributed to external influences and the disorders which they cause. The origin must be sought in quite other processes, taking place in the organism itself and then forming the immediate cause of this all-destroying disease. Like dropsy and tuberculosis, cancer is the last of a number of other suppressed, but uncured, diseases which have preceded it. Cancer always follows upon some former diseases, especially sexual diseases, such as syphilis. Whether such have arisen directly or in directly is of no import. The main point is the presence of foreign matter, which chooses some path through the body, along which then form, as a final stage of the disease, those *proliferations, tumours* and gangrenous places, which are the horror of mankind. The predisposition to cancer may be ascertained years in advance by the aid of my Science of Facial Expression. For long before the actual cancer appears, nodules and swellings are always to be found on the neck, which point to the formation of growths over the whole body, and in particular to extensive hæmorrhoidal tumours in the abdomen. These hæmorrhoidal tumours may attain to such a size, that they obstruct the digestive canal, so that the fæces can no longer be expelled in the natural way. In various serious cases of cancer, which I have treated, I have observed that the digestion has always

been completely obstructed. Without purgatives and enemas it was impossible for the patients to evacuate the bowels. I have likewise observed that after a long use of purgatives, especially *pills,* an internal gangrenous state is always brought about, leading to tuberculosis and particularly to cancer. For years the system can tolerate the use of such purgatives, and the irritation of the digestive and abdominal nerves caused by them. Gradually, however, the nerves become so excited that they are incapable of operating without ever-increasing stimulation, whereby such dreadful disorders, as cancer are brought on. Just as in tuberculosis and dropsy, and all the various final stages of other preceding diseases, the cause of cancer is usually an unnatural mode of living, pampering, over-feeding, and especially an over-excitement of the nerves through stimulants, or by medicaments. The allopathic school is just as powerless here, as it is against all other final stages of disease. It is sad to see how the doctors strive to cure cancer solely by operating on the proliferations and new growths with caustics, or the knife, such as was the case with the late Emperor Frederick. They forget to enquire whence these new formations arise. The nature of the disease evidently remains quite unknown to them, otherwise they would not, in this disease, select as the object of treatment merely the last symptom, the gangrenous form, as it were, of the foreign matter—the new growths. They would then necessarily have seen that there must also be a cause for these growths, and that on the removal of this cause the attention must be concentrated.

As an accompaniment of a gangrenous condition—and therefore also of cancer—there are often most unbearable pains and unpleasant sensations. To bring relief to the sufferer, the orthodox physician injects morphia. Hereby the desired result is attained temporarily, but only at the expense of the whole body and nervous system, which experiences the greatest injury from the after-effects. Medical

open suppurating sores of greater or less extent often form at some distance from the point of friction, which continually throw off pus *i. e.* foreign matter in an acute form, a state of fermentation. This pus does not come, as many foolishly suppose, from the friction, but simply and solely from the condition of the patient's body. It is originated wholly by the inner latent or acute inflammation, which is brought about by the foreign matter being in a state of fermentation. This pus, therefore, is nothing more nor less than the cause of the crisis. It is thus quite a mistake, if patients employing my method for themselves at home, grow anxious at the appearance of such sores. It is just this participation of the body in the cure, and the expulsion of the foreign matter, which proves most conclusively, that under the influence of the baths recovery is taking place. Naturally the sores at the place of friction and the formation of pus, are worst when the internal inflammation has already caused a gangrenous condition, such as is the case in cancer. The patient, when not bathing, must then apply a wet linen cloth in several folds wrapped a number of times round the sore, and keep it as wet as possible.

Another case of cancer may here be mentioned, as being of general interest. A woman in the beginning of the fifties was suffering from *cancer of the breast.* Her left breast had been operated upon, in Berlin, by the same eminent surgeons who attended the late Emperor Frederick. Soon after, the right breast was also attacked by cancer. The "very successful" operation, therefore proved quite useless; indeed, the patient's general condition was decidedly worse than before. She then presented herself a second time to the above-mentioned surgeons, to consult them about the re-appearance of the cancer. After a long examination, she was told that in order to effect a cure, the right breast would also have to be operated, but that her body was too weak to bear this,

so that she could not survive the operation. There was no other means of cure, however. In her perplexity, thus given up by the "first physicians" of Germany, she came to me. The right breast was gangrenous, and several hard tumours, some as large as an egg, dark coloured and gangrenous, had formed, extending from the breast to the arm-pit. The abdomen, too, was covered with tumours and abnormally large and hard. The digestion was bad, the bowels moving but once every third or fourth day, and then only by means of enemas. Hard balls of fæcal matter, rendered black by the internal heat, formed the entire evacuation. The urine also was scanty. Low vitality gave rise to great anxiety, especially as excessive headaches diminished it from day to day. This woman took up my treatment with great perseverance. The headaches soon abated. The digestion also began to improve slowly from week to week. The number of baths daily had to be most carefully regulated, according to the patient's condition and strength. The treatment itself was somewhat painful during the first six weeks. During its course, the effect of the so "successful" operation in Berlin, was very plainly manifested. In place of the old, deep scar on the left breast, there formed, during the very first week of treatment, an open gangrenous sore, which constantly grew in size and depth in the course of the first four weeks, until it was about fifteen square inches in extent. The gangrene of the right breast decreased in like measure as that of the left increased. By operating the left breast, the cause of the cancer had by no means been removed, but merely the extreme seat of the fermentation. The system was thus forced to divert the progress of cancerous fermentation, until at length it was transferred to the right breast, after hard tumours had formed from the right breast and up to the arm-pit. By my treatment the disease was compelled to retrogress, so that there was nothing surprising

in the reappearance in the left breast of the morbid matter, in the same acute condition in which it was at the time of the operation. Here again, a striking proof that Nature does not submit to the violence which the medical profession is so ready to commit. Every operation affords a fresh proof of the inadequacy of the modern medical school, and of its absolute poverty as regards all real curatives. *Operations are still more unnatural than the use of medicaments.* And now my readers will understand why on the title page I describe my Science of Healing not only as "without medicines", but also as "without operations".

But to return to the case. By bathing regularly, the pain which the patient had to bear, in consequence of the changes taking place in the body, became more endurable after the baths. Nor was it long before open suppurating sores appeared at the place of friction—a certain proof that the great internal gangrenous inflammation was being drawn off. Soon the other tumours under the arm-pit likewise softened, and gradually dispersed, being always drawn down more and more towards the abdomen. During the first two months the patient had lived solely on wholemeal bread and fruit. On this diet it was possible for her, by taking the friction baths diligently for three months, to so far recover, that the open sores in the left breast were as good as healed and she could journey home.

I have treated many other cases of cancer. Amongst them was one of cancer of the tongue and another of the throat, both common enough diseases to-day. My treatment here, also, proved successful.

The hard cancer nodules in the throat became *soft* in a few weeks and excreted pus. The patient was then able to swallow without pain.

In the case of cancer of the tongue, after the application of each friction bath, a brown coating disappeared from the

tongue. The tumours there vanished much sooner than those in the lower part of the body, so that the tongue was soon smooth and normal.

The most dangerous matter in all these cases is the immense hæmorhoidal tumours in the abdomen. In cases where the patients are no longer able to take solid food, it is at all events possible to banish the unbearable pains, and so obviate morphinism and starvation. In this way, too, we can dissolve the tumours and cure the sleeplessness. Nevertheless, there can be no real cure for the patient, since the continual liquid food does not produce normal evacuations of the bowels.

The effects of the friction sits-baths were most striking in attaks of *suffocation,* such as frequently occur in severe diseases. With patients I have treated, who often had several attaks daily, the danger of suffocation was over only a few minutes after the commencement of the bath. Whenever a tumour in the throat dissolved, and poured its pus into the wind-pipe, or threatened to suffocate the patient by swelling up before dissolving, these attaks of suffocation occurred. They were always instantly averted by the fricton baths. These processsess, for the prevention of which *tracheotomy* has hitherto been the only means tried, are of the greatest significance. In these dangerous crises my friction baths perform the same invaluable service as they do in suffocative attacks occuring in diphteria, to cure which, physicians unfortunately know no other remedy to try, than surgical operations. Injections of serum, as the reports of the hospitals show, have in no way diminished the number of operations. We see by this, of what small worth these injections are.

Proud flesh. Those proliferations and new growths which taken place on injured parts of the body, com-

monly known as "proud flesh", are far less dangerous than cancer. They can also be much more rapidly healed, inasmuch as, in the rule, the proud flesh can be transformed into pus more quickly. In this way the expulsion of foreign matter from the body occupies less time. This has been amply confirmed by actual cases in my practice, one of which I here cite.

The patient was a woman of thirty, whose right forefinger had been in a bad state for some time. The tip in consequence of an injury sustained, had become inflamed and got rapidly worse, until finally a large growth of proud flesh took place at the injured spot. The physician who was treating the case, immediately cut this away, cauterising with lunar caustic and similar corrosives. This was without success, for in spite of repeated operations, the proud flesh always appeared again. The finger finally became gangrenous, when the physician declared that the disease had reached the bone, and that an amputation was absolutely necessary to prevent it spreading further. The patient, however, not being able to reconcile herself to an operation, came to me. I explained to her that amputation, such as the doctor had advised was not only wholly unnecessary, but absolutely prejudical to the health. The diseased finger, I further explained, resulted from a definite cause, and only when this latter was removed, could the finger be cured. I prescribed three to four friction sitz-baths daily, each of half-an-hour's duration. She was to live on an unstimulating, natural diet, and during the first three or four days take a local steam-bath for the finger before the friction sitz-bath. The woman meanwhile was lying in, and therefore had some scruples about taking friction sitz-baths. When I told her, however, that I knew no better advice, she decided at once to follow it, for otherwise there was nothing but amputation. The cure was most rapid. Already after the first bath, further growth of proud flesh

had ceased. On the third day the flesh began to be transformed into pus, indicating a great improvement. The gangrenous condition had ceased, and consequently all danger as regards the bones and fingers was over. Within fourteen days the diseased finger was completely healed, nor was a trace of a scar to be seen.

Part III.

Treatment and Cure of Wounds, without Drugs and without Operations.

IT is no easy matter to overcome the deep-rooted prejudice in favour of treating wounds according to the principles laid down by surgery. The current belief is, that all kinds of injuries, whether internal or external, as well as wounds can only be healed by surgical and antiseptic treatment. How erroneous this idea is, is proved by the brilliant success which my method has met with. It is, in fact, precisely in such cases, that the remarkable healing power of hydropathy can be so strikingly demonstrated. And there is no more powerful means of propaganda for the treatment of wounds by water and other natural agents, than my system of cure.

Apart from its painless character, my system enables us to heal nearly every injury, in scarcely one third the time required by medical, so-called antiseptic, treatment. This statement is proved by the large numbers of patients whose injuries have been healed. There has not been one single unsuccessful case. Another great advantage of my method is, that not only are the disfiguring scars, which surgical operations necessitate, obviated, but the wounds themselves leave practically no marks behind.

Whenever an external injury is received—a cut, stab, contusion, burn, frost-bite– it will be at once remarked that the system sets about healing it. The irritation of the nerves caused by the injury, calls forth an increased flow of blood and other substitute-matter to the wounded part. There is then increased warmth and swelling produced by the friction of the matter collecting, a process which in the case of burns and contusions especially, is attended with much pain.

If, now, we assist the body in the right manner in its effort to repair the ill, an extremely rapid and painless cure will result.

The pains mentioned above, usually commence only when the body begins the work of healing. They are nothing more or less than *a local traumatic fever—a local fever resulting from the wound.* And if we remember that just as in other diseases, so also in the case of wounds, we have to do with fever, even though of a different form, it will not be difficult to find the way to cure.

As we have already learnt, our first attention must be devoted to subduing the fever, especially where the injury is extensive, so that the local feverish condition may be prevented from becoming general.

The pain will at once be taken away, if we succeed in stopping the fever. Nowhere can we more clearly observe, how fever is nothing more than a curative and compensatory effort of the system. Unfortunately, it is a matter of too common occurrence to-day, that the traumatic fever spreads over the whole body, the wounds healing, much more slwoly in consequence. There is a deep reason for this. The wounds of a healthy person, heal very quickly and easily; not so those of a person whose system is encumbered with morbid matter and who therefore is already suffering from an internal fever. Here, the injury, and accompanying nervous irritation, can very easily form the exciting cause of a still

more extended process of fermentation. But even where this is not the case, the cure is retarded. The system drives an increased quantity of blood to the injured parts, in consequence of which, more foreign matter is carried there. At such a part, therefore, an accumulation of morbid matter readily gathers; or it may develop into an excretory channel, in the form of an open wound.

I have often observed that in the case of animals left quite to themselves without any aid whatever, wounds heal in an incredibly short time. In studying such quite natural occurrences, I have always been struck by the immense difference observable between these cures, and those of human beings. Nothing has more stimulated me to reflect, and to investigate the secrets of nature. Once I shared the general opinion, that in event of injury, the poor animals were far worse off than human beings, commanding all the resources of science, and enjoying the affectionate care of friends. Experience has shown me, however, that a cure takes place much faster in the case of animals, than in the case of patients in the hospital. My observations led me to the conclusion, that there could be no mere chance in this matter, but that there must be deep underlying reasons. I will produce some elucidatory examples.

A cat had been caught in a steel trap, which had broken the animal's right leg an inch or more above the hough, just where the thick flesh begins. In her endeavours to get free, the cat had dragged the trap about, twisting the leg several times round, and getting the wounded parts covered with dust and chaff. On letting the animal out of the trap, she rushed off with the broken leg dangling in the air. Nothing was seen of her for some days, so that it was thought she had died.

It might have been a week afterwards that a sick cat was found in a neighbouring barn, and it turned out to be

the one which had been caught in the trap. The hind leg had meanwhile fully healed, in an astonishing manner, a considerable swelling, however, still remaining at the place of fracture. It was evident from the animal's emaciated appearance that she had eaten nothing the whole week. Notwithstanding this, she absolutely refused even the daintiest bits, nor would she touch water. The injured leg she kept carefully stretched out, always in the same position, and every now and then she licked the wound all over. This appearently eased the pain, for she continued to lick the part most perseveringly. There was a significant reason for the cat's fasting. As we know, the process of digestion is one of fermentation, and is inconceivable without the production of heat. Now as the animal had no water to cool the wound, she dispensed with food altogether, so that no greater heat might be generated in the body. Her instinct told her exactly what to do.

After a few days the animal, now reduced almost to a skeleton, appeared again, and after receiving some milk, soon became quite lively. After a month the cat was in a fully normal condition, the only sign of the injury being a hard lump at the place of fracture, which, however, in no way impeded her motion.

Now, suppose a similar accident to have happened to a human being; what course would the cure have taken with antiseptic treatment? An *amputation* would have probably been unvoidable, and the affair would have lasted for months, until the patient was so far cured as to be able to live for the rest of his life as a cripple. Even in the best case, supposing amputation to have been avoided, the leg would under medical treatment always have remained stiff.

I may here mention another case, also from the animal kingdom, well adapted to explain my treatment of wounds. A dog had been severely, but not fatally

wounded by a charge of shot. Several pellets had passed through the fore and hind legs, while two had penetrated the neck from the right side, lying embedded in the skin on the left side. The windpipe, the œsophagus, and the main arteries were fortunately uninjured. Whenever the wounds grew painful, the dog sought out a damp and shady spot, and cooled his body, especially the wounded parts, on the fresh earth, which he always scratched up afresh as soon as it became warm. He incessantly licked the wounds and refused all food. Twice a day he went down to a pond near by to drink water, which was his sole nourishment. Here also, the cure was a rapid one. In five days the injuries in his legs, which he would lick continually, might be regarded as healed, if still somewhat swollen. The neck, which the dog was unable to lick, on the contrary, healed more slowly, although not so badly wounded as the legs. The animal did not take any food until about a week after the accident. Meanwhile the wounds on the neck had also quite healed. The pellets were now lying embedded between the skin and muscles.

A third case will also interest readers. A large Newfoundland dog had had his right paw run over and much crushed by a coal cart. The skin was stripped off and the bone splintered. The animal was unable to walk, and had to be conveyed home. Here he crept to a shady place, and licked his paw continually. Not until the fourth day would the dog touch food, the wound then being sufficiently healed to allow him to go about on three legs. In twenty days the animal was again quite well.

From these examples we can gather many useful hints regarding the treatment of wounds in the case of man. *Cooling with water and abstinence from food, or at all events from all heating food*, are the natural remedies in this case also.

The surgical method as practised in modern hospitals,

according to which the most "nutritious" foods such as flesh-meat, beef-tea, eggs, milk, wine, are prescribed, to raise the patient's vitality, is a perfectly false one. This is the worst thing that can be done and is quite contrary to the laws of nature. In my opinion, it is best during the first stage of wound treatment, not to burden the body with any work whatever, as this only hinders the curative efforts of the system. In treating wounds in the antiseptic manner with *carbolic acid, iodine, corrosive sublimate, cocaine etc.*, the medical profession shows how little it understands, even to-day, of the nature and significance of the processes which go on in the human body. Surgeons, knowing nothing of the remarkable cures of hydropathy, deviate ever further and further from the right path. The natural way of curing is a thing unknown to them.

I will now proceed from these introductory remarks to a consideration of the various kinds of wounds, relating some actual cases by way of example.

Incised, punctured, contused and lacerated wounds. When the body, receives a wound through a cut, stab, bruise, or laceration, the larger and smaller blood-vessels thus opened empty their blood outwards, by reason of the inner pressure, until this latter is counteracted by external counter-pressure. As this process plays an important part in the treatment of wounds, it will be well to consider it in detail. As is well-known, we live under an atmospheric pressure of about 15 lbs. per sq. in. Our bodies could never sustain and bear this pressure, did they not exert from within a high counter-pressure. In ascending mountains many readers have no doubt observed the difference in pressure. On very high mountains, or during balloon-voyages, the atmospheric pressure is so low, that sometimes blood issues from mouth, nose, eyes and ears, being forced out by the excessive inner pressure. As soon as the inner pressure is again, counter-

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acted by an equal one from without, the bleeding instantly ceases. When the body receives a wound, it is deprived of the walls which confine the inner pressure of the blood within natural limits, and thus bleeding ensues as the immediate result of a wound. The first thing to be done, therefore, is to staunch the bleeding. The pressure of the blood is greater or smaller, according to the size and depth of the wound, and according as larger or smaller blood-vessels have been injured. Whenever possible, all tying of blood-vessels must be avoided, since by ligatures we impede the normal circulation and treat the organism in a manner which cannot be regarded as natural. There are other more effectual remedies which quite obviate ligation. Only when an injury of large blood-vessels render such a loss of blood probable as would endanger life, and the necessary compresses are not at hand, can the application of ligatures to arteries, or to limbs, be regarded as justifiable.

With the hæmorrhage, pain generally arises, which must be stopped simultaneously with the bleeding.

There is no more suitable means to this end, than to well bandage the wound with a wet linen cloth folded several times, so that the inner pressure of the blood, and with it the hæmorrhage, is counteracted. If practicable, the wounded part should afterwards be held in cold water, until the pain is allayed, which may take several hours. If not feasible, the part must be cooled by letting cold water drop, either continuously, or at short intervals, upon the compress, so that the latter is kept well cool.

How thick, that is, in how many folds, the *coarse* linen compress should be depends upon the nature of the injury, *i. e.* on the internal pressure of the blood. For smaller wounds, the cloth may be folded 2, 4, or 6 times; for larger wounds 10, 15, 20 or even 30 times. If the compress laid on a large wound were too thin, it would neither

prevent bleeding, nor heal so quickly. On the other hand, the compress should not be too thick; cuts on the fingers, for instance, heal far more slowly under a thick water compress of say 20 folds, than under a thinner one follded say two to four times.

The linen compress must be so folded as not to project more than an inch or so beyond the edges of the wound all round. In this way the circulation of the blood in the adjacent parts will not be hindered during healing of a wound —a matter of the utmost importance. Over the water compress only a woollen bandage must be wrapped round one or more times. In this way the compress is held in place and the pressure can be regulated; the proper degree of bodily warmth is at the same time thus attained. Before applying the compresses, they should be dipped in clear cold, if possible, soft water, and lightly wrung out. As long as they cool the body, no severe pains will arise. Whenever the compress becomes warm, it must be dipped in fresh cold water again. If pain is felt, it shows that it is time to apply a colder compress, and this must be done very frequently at first.

It is, however, in some cases not advisable to apply the compresses too frequently. It is then better to lay a *compress of clay or loam* on the wound. To do this, put some well cleaned clay or loam in a pot, and stir it with cold water into a thick paste. Spread this paste thickly on a piece of linen, and then lay it directly upon the wound, with the earthy side in contact with the flesh. This compress can be renewed after some hours. The same process may be followed for proud flesh or gangrenous ulcers.

Without any real knowledge of hydropathy, the representatives of the orthodox medical school, it may be here remarked, have some time ago invented a brillant "medico-surgical" improvement in water compresses. They

introduce a sheet of india-rubber between the compress and the woollen cloth. Water compresses of this kind are of little use, since the rubber prevents the evaporation of the water in the compress and the free perspiration of the body, This kind of hydropathy is simply illusory. Such a compress can never have the desired result; I must distinctly warn all against using such.

As we have already seen, an unstimulating diet exercises a most benefical influence on the healing of wounds. The less food consumed, and the less stimulating the nourishment, the better the process of healing goes on. Wholemal bread, fruit and water, without any addition, form the best diet. The easiest and most quickly digested foods are the best, since they engender the least heat in the body. This is a point of great importance in the treatment of wounds.

There is also another remedy, which, where it can be applied, much promotes the healing, process, and this remedy is my friction and hip-baths. By their use the fever at the wound is absolutely prevented, or if local fever has already set in, they will act derivatevely. At the same time, the vital powers of the entire organism will be stimulated so as to greatly accelerate the process of healing. These baths are especially necessary for all who are much encumbered with foreign matter. I will illustrate what has been said, by some examples.

In a factory, a man of forty-five had had his left hand injured by a circular-saw, which had torn the fleshy cushion between the forefinger and thumb apart, the flesh remaining hanging upon the saw. The bone was fortunately uninjured. A few minutes after the accident, the wounded man fell into a swoon, from which he did not awake for about half an hour. Meantime a linen shirt had been folded several times, and so firmly bound together around the injured hand, that the bleeding as good as ceased. Thus bound, the hand was held in a

basin of cold water. Through this procedure the pain abated considerably within an hour, and in the course of a day quite disappeared. The cooling process had to be kept up day and night at first, but on the fourth day it was possible to lessen the size of compress, so that parts of the hand could be left free. A compress, folded about twenty times was now laid upon the wound and pressed firmly against it with a woollen cloth bound round the entire hand. The woollen cloth soon warmed the rest of the hand, thus promoting a proper circulation of the blood. The compress had at first to be wetted with cold water every half hour, and then at longer intervals; and in about a fortnight the wound was so far healed, that direct treatment of it was no longer necessary. In four weeks the man could again work with his hand. It should be added that from the second day of the treatment, the patient also took my friction baths twice daily, which assentially accelerated the process of healing. The patient's state of health, it may be remarked, was far from being good.

With the antiseptic treatment, in all probability healing would have been a long and painful process. The doctor would certainly have sewn the wound, when stiffness and insensibility of the thumb would undoubtedly have been the result.

With my treatment, apart from the rapidity, the wound healed so as not to leave the least trace of a scar. Although at the beginning the wound was a very wide one, the body healed it from within, the edges of the wound falling off in time of their own accord. Several important nerve-connections having been destroyed by the injury, half of the thumb for the time being lost the sense of touch, so that the patient was unable for months to grasp and hold small objects with his thumb. After applying my friction sitz-baths daily for some length of time, the nerve-connections were restored, so that the normal sensibility returned to the finger.

Bruises, contusions, and internal injuries: The above treatment is also suitable for bruises. It often happens in the case af bruises, contusions and internal injuries that *blood-tumours* and *blood-cysts* form internally an exercrise a disturbing influence on the entire organism. In those cases which cannot be reached from outside, my friction baths will effect remarkable cures. They cool the system internally, strengthening the nerves at the same time in the highest degree. In individual cases where my baths may not quickly enough disperse internal accumulations of coagulated blood, or other products of fermentation, local steam-baths may be used with excellent results, but must always be followed by friction baths. By means of the steam baths all morbid matter is rendered easier of excretion.

A girl who had crushed and punctured the forefinger of her right hand in a knitting-machine, once consulted me. During the first weeks she had been treated by an orthodox physician, who had exhausted the resources of antiseptic practice without having succeeded in healing the wound. He had employed *iodoform* and *carbolic* and *salicylic acid,* and had not hesitated to tell the girl that amputation of the finger or hand might be necessary. The girl suffered dreadful pain and the finger swelled more and more until it was quite blue. In the third week, the whole hand was swollen and had assumed the same colour. Finally, the doctor asked her if she had courage to have the hand amputated. The thought so frightened the girl that she came to me. I immediately applied cold water compresses, and ordered two local steam-baths daily, followed by friction sitz-baths. After only two hours treatment, the pain had almost completely disappeared. Nor did it recur during the entire course of treatment. The excessive swelling of the hand and finger abated hourly, so that in two days they had both regained their natural form and colour. In from three to four weeks

the girl could work again, even though unable to use the hand quite freely.

In this way an interesting scientific operation was no doubt prevented, but on the other hand the girl was saved from becoming a cripple for life.

In a similar case force of necessity compelled a carpenter to consult me. He had crushed and wounded his left hand, both on the palm and back. The man had no confidence in the antiseptic treatment, by reason of former sad experience. The whole arm up to the shoulder was already so badly swollen that he could not move it. In less than three hours by my treatment, the pain was subdued, and after 48 hours the swelling had completely subsided. In a fortnight the man was able to return to his work.

The two following reports of cures sufficiently prove the fact, that the antiseptic treatment effects no real cure, but simply produces an interim state.

Two girls working on the same machine were *injured* in the same manner on the *forefinger*. The *bone* from the tip to the first joint was *fractured* and *comminuted*, the remainder of the finger being uninjured, however. The age and constitution of the girls were likewise the same. The one girl went to a physician, who applied the antiseptic treatment; whilst the other was treated by me. The doctor at once removed the splinters of bone and applied iodoform liberally during the operation. The girl had much pain to endure, still in a week the finger was so far healed, that she could work again, if absolutely necessary. The first joint, however, through the operation was completely crippled and the whole finger disfigured. With every change of weather the girl for years experienced great pain in the old wound, caused by nothing else than the wrong treatment, whereby foreign matter (iodoform)

had been directly introduced. The finger also remained with feeling.

The other patient who used *my* method, attained much better results. My first endeavour was to stop the pain, and I succeeded in the course of the very first day. For this purpose I prescribed the already familiar means: wet linen compresses and friction baths—the latter, because the girl was much encumbered in other respects also. Without any further application, the splinters of bone festered out of themselves on the third day, without the patient suffering any particular pain. On the sixth day the second largest piece of bone followed; in a month the girl could return to work again. In six weeks the finger was perfectly healed, without any loss of feeling, any crippling, or any scar. Nor have, up till this day, any pains set in on changes taking place in the weather. Who then was the better surgeon here, Nature or Antisepsis?

Another not less interesting case was that of a man, who in 1879 had suffered extensive *rupture* of the *tendinous ligament* and *muscle bundle* in the left ankle. The patient had to keep his bed for two months, and was treated with ointment. After the foot had healed, it was still weak, and remained swollen. This was especially noticeable in walking, the foot frequently turning over and causing much pain. As the man was in poor health, he commenced with my system, in March 1889, and as he found the treatment did him good, he continued it for a considerable time. At the beginning of 1890, the feet became inflamed again at those places where he had suffered years before. The inflammation was accompanied by pains which lasted three days. By the aid of my cure these disappeared on the fourth day, and at the same time the former *general debility* and *weakness of the ankle* disappeared. From this case we see how the injury received eleven years before, and not properly healed, was absolutely cured by my method.

Burns. Also for burns, cold water forms and excellent means for quieting the pain which is always experienced. *Often, to get rid of the pain, the wound must be held under water for several hours.* If only held in cold water for a short time, the pain even increases; one must put up with it until it has disappeared. When the burning pain has abated, compresses should be applied as in the case of wounds. River or rain-water is preferable to spring-water, as the latter often contains substances which hinder the process of healing and increase the pain. It is astonishing how quickly even severe pains are healed by this means; it is certain that many who have found their death through burning and scalding, could have been saved by this method.

When burns only heal slowly with this treatment, it may be confidently assumed that the patient's body is heavily encumbered with foreign matter, in other words, chronically diseased. In such cases a general treatment of the whole body by means of my friction baths, in conjunction with unstimulating diet is to be recommended. But even should the cure take its wanted course, the curative process will be greatly assisted by these baths, whenever the patient is equal to them.

A man had received three very considerable burns, two on the neck being as large as a five-shilling piece; the third, the largest and deepest, was on the foot. The patient was at first under antiseptic treatment, but on account of the excessive pain, could not bear it longer than a day. He then began self-treatment according to the old Nature Cure system. This, however, likewise not affording sufficient relief, after a week, he consulted me. My first aim was naturally to subdue the pain, which I succeeded in doing with cold compresses within two hours, after having well cleansed the wounds of oil and pus. After two days of this treatment the wounds presented an entirely

different appearance. The smallest burn on the neck was already as good as healed, and the others were healing rapidly. The deep wound on the foot had likewise decreased by half in depth. In five days more the patient could again return to the factory. The burns on the neck were fully healed, and that on the foot so far improved, that the man could at any rate walk.

Gun-shot wounds. The treatment of these is exactly similar to that of incised and punctured wounds. Nevertheless, on account of their importance in war, it is well to submit them to a special consideration. For every soldier it is of great importance to know precisely what to do as a first aid to the wounded. When the wounded must lie for hours before any help whatever comes, it is no wonder that with many injuries—especially in case of antiseptic treatment—gangrene supervenes, usually necessitating amputation, if, indeed, death does not ensue. Amid the general helplessness and ignorance of the nature of life and its conditions, and of the manner in which the healing of wounds is effected through the organism itself, there is no other resource to be had than to amputation. *But amputation never heals wounds, it only inflicts far deeper ones and thus often turns the patient into a cripple for life.*

The popular and medical belief is that the ball or fragment of the projectile, if it still remains in the body, must without fail be extracted to avoid injury to the system. *This is a gross error, which has already cost many thousands of lives.* For owing to the weight of such shot etc., it is often most difficult to remove them from the body without injuring it still more. The inner parts of the body are, as is well known, so coated with mucus, that the projectiles easily force their way past them, and whenever they happen to penetrate them, make the smallest aperture possible, which permits of their passing. This is owing to the

fact that by the pressure which the shot exerts upon the tissues, the latter expand somewhat on account of their elasticity. It is exactly as with india-rubber penetrated by a shot. We find that a hole is produced, through which the ball cannot repass, except by stretching out the rubber.

What is it, then, that we observe when the injured parts begin to swell? Generally the swelling very soon ceases, and the former elasticity is also lost. The injured parts are now surcharged with blood and other curative matter and are therefore rigid. If, now, we attempt to extract the ball through the same channell that it entered (as is the usual practice, if there appears to be any chance) we shall find is impossible. For the entrance to the wound and the whole passage is swollen, and morever the tissues have lost their elasticity. Hence the extraction of the ball would involve further laceration and injury. What a disastrous effect this would have on the organism may be easily imagined. *The ball itself is far less dangerous to the body than its forcible extraction,* The system soon renders the great mass of foreign matter quite uninjurious, first surrounding it by a watery accumulation, changing in time to a firm capsule enveloping the projectile. Sooner or later, when not robbed of its full vital power by the poisonous antiseptic treatment, the system will expel the foreign body, in the manner most suitable for the organism. Thus it has often happened, for instance, that a ball which had remained in the shoulder, festered out after months or years at the buttock or thigh.

The attention, therefore, must not be devoted to extracting the shot, but to preventing heat in the wound, and to stopping the bleeding. I have already explained how this is to be done. It would, therefore, be well if every soldier were to be furnished with some linen and woollen bandages, in order to aid himself instantly in case of need. In most cases, too, water is readily to be procured—easier, at all events, than

any other remedy. Where none is to be had,. the soldier may take any other cooling medium, such as grass, clay, moist earth, or the like. These also may be used in need to allay the heat, as soon as the wound is firmly bandaged. In this manner many wounded soldiers, who are still able to move, can apply the first aid to themselves; without losing time—so precious in such cases—in waiting until other assistance arriver. It is, therefore, a matter of prime importance, that every soldier should be thoroughly instructed in this method of the natural treatment of wounds without medicaments and operations. He is then in a position to act promptly and usefully, and not lie helplessly groaning until a surgeon appears. The soldiers who are slightly wounded, would also be in a position instantly to aid their more severely wounded comrades.

From the time of the Franco-German War of 1870—71, I have had ample opportunity of gathering experience of the injurious effects of the antiseptic treatment. I will here report a striking case. In the year 1883 a gentleman came to me, who had received a shot through the abdomen in the war of 1870. The ball had come out at the back, close to the spine. In spite of all the antiseptic treatment the wound had not fully healed up in these thirteen years, but was continually suppurating, At times it had closed together, but only to break out afresh at the first opportunity. The patient's condition became worse and worse and he was now unable to walk at all. By means of my Science of Facial Expression, I immediately perceived that the cause of this difficult cure was simply the patient's heavy encumbrance with foreign matter, and the accompanying chronic state of fever. I did not apply any local treatment to the wound at all, but sought in the first place to subdue the chronic fever by the aid of my friction and steam-baths and a suitable diet. Within a week the wound was healed and has never broken open since. In a fortnight

the man, delighted at the rapidity of the cure, was able to walk again. At my advice, he continued the treatment for some time longer, until finally the encumbrance was completely removed.

A similar happy result was that attained in the case of a soldier who had had *his knee-cap* shattered in the war. The wound, despite the use of all imaginable remedies, had not been healed. The leg, although not altogether stiff, was much impeded in its freedom of motion. This case is the more remarkable, as the patient had been treated for twenty years according to the principles of the *old Nature Cure,* without the desired result being obtained. Twenty years after the accident the man commenced with my system of treatment, not on account of his knee, but in order to test its value in general. He was not a little astonished when, after some time, inflammation of the knee-cap set in—a proof that the injury had not really been properly healed before. After continuing my cure, for a further period, however, this inflammation soon disappeared. His astonishment was still greater now, to find that all stiffness had disappeared from the joint, so that he could use his leg as well as ever.

Fractures. Amongst diseases which arise through external injuries are fractures, the healing of which goes on more or less slowly. The orthodox doctor generally applies a plaster of Paris dressing, whilst I make use of wholly other and much more certain and effective curative means. Above all things, my process exercises an immediate cooling effect, which will continue until the swelling which follows upon a fracture, and the accompanying pain, have fully disappeared. The use of friction baths must also not be overlooked, as they essentially promote the healing. Anyone who discards the natural water-treatment in favour of plaster dressings, is simply denying the truth of definite natural laws. If, for purely local reasons, that is, in those

cases where the injured limb cannot be kept in the necessary position by means of water compresses, a rigid support is necessary, such can be made of wood, pasteboard, bark or other such material. But a plaster dressing should *never* be used.

Those who follow my advice here, will find how surprisingly quickly fractures heal, and how the pains are reduced to a minimum.

A gentleman, thirty years of age, had *broken* his righ *upper arm* close to the elbow. Being an adherent of the Nature Cure method, he immediately applied cold water compresses and arm-baths. The physician consulted wished to apply a plaster bandage, at the same time remarking that the arm would probably always remain stiff. This being no very pleasing prospect for the patient, he came to consult me. I advised him to put the arm in a wire gauze and pasteboard splint, and to cool the fracture with compresses according to my method. My friction baths, and a simple unstimulating diet in great moderation were likewise necessary conditions. The result was astonishing. In twenty-four hours the pain and swelling were completely subdued. In a week, the patient was already able to write a little. In another week, he could lift a chair without difficulty and in three weeks the fracture was completely healed.

Open sores. The gash, the stab, received in war, wounds received in honourable fight, these, the result of sudden external injury, are easily and quickly healed. It is quite otherwise with those disgusting open sores of various kinds, which invade all parts of the body. The medical profession may call the suppurating, stinking secretions what it will—syphilistic, cancerous, or tuberculous—the fact remains that they are all one and the same thing, and indicate a condition of decomposition in the living body. Allopathy has not yet succeeded in really healing such open sores, even if by the aid of medicaments, it succeeds in preventing the

process of decomposition from showing itself; or in transforming it into another state by driving the foreign matter back into the body again. To cure this evil, however, allopathy is not able. She has neither the power, nor the means to effectively oppose the disease. Thus it is that we see the wounds apparently healed, break out again in another part of body—in other words, how the secretion of morbid matter in the body always continues. Such open wounds without external injury, it is true, are not usually painful like acute injuries; but, on the other hand, their cure—if such is, indeed, possible—is much more tedious. They always stand in intimate relation to some deep-lying chronic disease. How many of the suicides daily committed are not to be traced to such a diseased condition. Here we see how systematic is man's opposition to our all-wise mother, Nature, in his daily actions and mode of life. What is the cause of such sores? I reply that they arise simply from the encumbrance of the system with foreign matter, and are invariably an advanced stage of earlier stages of disease which have not been cured, but merely suppressed. In most cases these final stages have been brought about by the saturation with so-called medicinal "remedies," such as *mercury, iodine' iodide of potassium, bromine, salicylic acid, digitalis, quinine, etc.*, which are always powerful poisons for the system. *Vaccination* is another system of introducing poison into the body, much to be regretted, for through it the human race becomes ever more degenerated. Vaccination has the effect of greatly weakening the vitality; hence it is, that the morbid matter, which has gradually accumulated in the body, no longer makes itself known through small-pox epidemics, but through much more horrible, lingering, often incurable diseases, such as *tuberculosis, cancer, syphilis, epilepsy* and *insanity*. Unfortunately the orthodox school has not sufficiently grasped the nature of vitality. Were it otherwise,

the injurious influences of the poisons contained in the medicaments which are introduced into the patients, whether by inoculation or innuction, would not remain hidden to its disciples—even though such influences may often only appear after many years.

Such medicaments, regarding the whereabouts and action of which in the human system, medical science is often in doubt, lay the germs—often years in advance—leading to saturation of the body with foreign matter, which is the ultimate cause of the open sores.

It is a well-known fact that medical science is ever on the search for new medicines, new desinfectans, new antiseptics. The remedies increase in strength—the one more poisonous than the other; and it must be so. At the *first* appearance of a disease (curative crisis) the attempt is made to so diminish the vitality, *e. g.* by *antifebrin,* that it is not able to continue the crisis, that is the disease. The latter now disappears as regards outward symptoms, but the *cause* of the disease is *not removed.* Nevertheless, allopathy will call this a "cure". If, now, after some time the vitality being in some measure restored, the same disease, or it may be some other, should again make its appearance, the antifebrin will no longer be able to react: a stronger, more virulent means is necessary to produce the first effect. The greater the vitality of the body, the weaker need the medicine be which will suffice to prevent a curative crisis; the lower the vital power, on the contrary, the stronger must be the drug to be capable of suppressing the crisis. Every medicine is a poison—virulent matter foreign to the body. The greater the vitality of the human organism, the more intensively, and more rapidly will it act to render such foreign matter harmless. The poison becomes enveloped in a covering of mucus. If, on the other hand, the vitality is weakened, a small dose, a weak poison, is insufficient to rouse it. It is more or less insensible, and will only

react, when absolutely compelled. Moreover, this process of rendering the poison uninjurious will go on much more slowly.

An example from my practice may serve to illustrate what has been said. A physician believed he had discovered an admirable remedy for open sores on the legs, and won great celebrity. The drug operated so effectively, that the sores usually healed up in a very short time, the morbid matter being simply forced back into the system. Thus one gentleman who had deep corroding sores all along the shin-bone, was very rapidly cured by this remedy. But as after two years the old sores broke out again, the patient went once more to the same physician. Alas! lhe famous remedy failed altogether this time. The doctor in his perplexity explained that the wounds were now of another character: this was not the original disease, and his remedy was not able to cure the new one; there was nothing to do but amputate the limb. Pitiable science! Unlike the undiplomed practitioner of the Nature Cure system, the privileged medical man knows no better way to aid, than to try and protect against disease by vaccination with pus, such as in the case of small-pox, and to cut off limbs, the abnormal condition of which he does not understand.

In the case of open, corroding wounds, we find the same uniform cause underlying all: the encumbrance of the body with foreign matter. Nothing is clearer than the fact that the pus, which is continually being secreted, contains foreign matter. We have here always to do with a far advanced stage, depending upon an abnormal internal temperature. This high abnormal temperature—fever, as I regard it—first creates a condition of fermentation, or decomposition of the foreign matter, which greatly assists the development of the bacilli. The foreign matter then changes its form according to the degree of temperature.

If we bear this in mind, the way which we may alter the condition and kill the dreaded bacilli, becomes quite clear to us. *The abnormally high temperature must be regulated. My friction and steam-baths, and an unstimulating diet, are the best possible means of regulating the temperature, just as my Science of Facial Expression affords the most rediable thermometer.*

I have had innumerable patients under my care, suffering from sores of various kinds: cancerous, tuberculous, syphilistic. In most cases where the vitality was not absolutely too low, and the body not super-naturated with drugs, the sores healed in a surprisingly short time. Of these many successful cases I will describe just one, a particularly severe one, where the cure took from three to six times as long as in the average case.

A gentleman, fifty years of age, suffered from open, suppurating sores on the feet and legs, up to the knee. There was a mass of wounds, one beside the other, some thirty or forty in number, the largest being fully four inches square. Watery, evil-smelling pus was being continuously discharged. They had already been temporarily healed, but the places then began to itch so violently, that the patient could not bear it, and through the scratching the wounds opened again. This itching was caused simply by the active internal fermentation of the foreign matter confined beneath the skin, and the excessive heat thus occasioned in the leg. As soon as the sores broke out anew, the itching ceased. The whole of the lower part of the leg assumed a dark brown colour, a proof that it was already gangrenous. Some of the sores went right to the bone. All the methods of cure which the patient had tried proved fruitless. There remained but the choice of amputation, or dying through the gangrene spreading further; and in his desperation he came to me, though far from being really a believer in my system.

By means of the Science of Facial Expression, I at once discovered that the digestion was altogether out of order. The stomach was unable to properly digest even the lightest foods, the body consequently not being in a position to produce normal blood. The lungs also were irregular in their action. It will thus be easy to understand that there was an enormous, and ever-increasing accumulation of foreign matter in the body. The condition of the stomach and lungs was such as to add to the amount daily. The patient had no idea that he was suffering from this chronic encumbrance, which was the cause of the diseased legs. Hence it was, that he could not comprehend why I should lay so much stress on treating the whole body, instead of only the legs. For the sores on the latter, I had simply prescribed light wet linen compresses, covered over with a woollen cloth. I laid most weight upon the patient using a pure, unstimulating natural diet, getting plenty of fresh air, taking four friction sitz-baths and daily promoting perspiration by natural means. The patient, however, from the beginning gave much more attention to the application of the compresses to the legs, than to following my instructions as to diet and baths, the purpose of which he did not understand. The consequence was, that for half a year things did not improve much. He was finally persuaded to follow *my* directions exactly. and not *his own* notions. The next six months led to most happy results. The sores had already decreased in extent and many of the lesser ones were completely healed; the troublesome itching had also ceased, while the suppuration had almost entirely stopped. The general condition and the digestion were now far better than before, and the affection of the lungs had ceased to advance, Encouraged by these favourable signs, the patient now vigorously pursued my course of treatment. In the second year the sores changed their place from below the knee to above it, those below healing and

breaking out anew higher up. The disease was thus nearer the abdomen—a most favourable sign. Below, the state of the leg grew more and more normal. When the first open sore *broke out above the knee,* where one had never appeared before, the patient believed my cure also was of no use, as the sores were now coming nearer the body. I explained to him that this was, on the contrary, a great improvement, for the foreign matter was now in process of retrogression, toward the abdomen whence it had come. He saw the truth of this, and continued the regular course of treatment. It lasted three full years, however, before his digestion and lungs were so far strengthened and improved, that the sores healed permanently. The normal colour returned to the skin simultaneously. In this way my method hat cured a severe semi-tuberculous, semi-cancerous disease which celebrated physicians had pronounced to be incurable. Nor has there, up till to-day, been the least symptom of the sores returning.

Stings of poisonous insects, bites of mad dogs and of snakes. Blood poisoning. The corpuscles of human blood are of the greatest sensibility. The blood reacts vigorously on coming in contact with foreign matter, the result being one similar to the process of fermentation. The bite of a poisonous snake will produce symptoms of fever, nearly identical with fermentation, in the blood of even the truly healthy man, notwithstanding the sound condition of his body.

When the system is already encumbered with foreign matter, the poison, of course, acts much more virulently. This is evident. The foreign matter, in itself a ready producer of fermentation, is greatly increased if poison enters the blood—whether through the bite of an insect or reptile, dog-slaver, pus or other product of decomposition. Large accumulations of foreign matter thus form and actively ferment in the organism, so materially increasing the danger.

Now the more foreign matter that is in the body, the more active is the fermentation brought about by such blood poisoning. Hence it is that the sting of a bee in one case may cause an immense swelling, whereas it would hardly affect another person more than a mosquito bite. I have also seen how one person has got hydrophobia through being bitten by a rabid dog, whereas another person, attacked by the same animal, suffered no ill effects worth speaking of. Snake poison, too, will cause death in one case, and merely fever in another. The danger does not always lie in the bite, but in the state of the person bitten. It is the same thing with so-called blood-poisoning, which is of so frequent occurrence after "extremely successful" operations.

My theory of fermentation likewise affords an explanation of the peculiar effects of the *bites of mad dogs,* where the poison of the slaver first induces a latent, preliminary stage of disease, the acute symptoms only appearing later. The poison first of all influences the abdominal nerves and organs, these effects not being transmitted to the head and brain until after some weeks. It is only then that the convulsive symptoms of so-called *hydrophobia* make their appearance. The digestion and appetite of rabid dogs, as I have frequently had opportunity to observe, will always be found to be quite abnormal.

The effect of a snake-bite will be learned from the following case.

A boy was *bitten* on the head by an *adder,* whilst lying in a wood. The result was a convulsed condition of the abdomen, which prevented the boy from urinating for fifteen hours. His life was in great danger. My system was now applied. and by means of whole and local steam-baths, the boy was soon brought to perspire profusely. At the same time the cooling friction baths and a strictly unstimulating diet was necessary. In a short time all danger was over, and the lad passed a copious quantity of urine.

If we now take a review of all the various kinds of *blood-poisonings,* of whatever origin, we always find that they begin with a swelling of the injured part. There is great heat experienced and high fever, even though at first only locally. To subdue the latter must be the first task, a local cooling of the part being of the greatest service. In the case of serious poisoning, it is frequently necessary to cool the wound directly, by putting it—as far as the part admits—directly in water, if possible running water. If it is not practicable to hold the part into cold water, cold water compresses of linen must be continually applied. At the same time my friction hip and sitz-bath must be used alternately.

Slighter injuries, such as *bee-stings,* cause a swelling, which remains for a time, and then disappears without leaving further consequences behind. It is here to be remarked that insects generally attack the parts of the body, where there are the largest accumulations of foreign matter. Linen compresses of the kind mentioned, will in such cases be found amply sufficient to heal the part. Such compresses assist the body in its curative efforts to expel the poison, or to render the matter uninjurious by covering it with mucus.

When the swelling spreads and threatens neighbouring parts of the body, danger is imminent, and there is no time to be lost. The part affected must be put in cold water, or should this not be possible, wrapped in wet compresses. When circumstances admit, my steam-baths (see pages 100—106), followed by friction sitz or hip-baths will bring instant relief. The friction baths must also be used separately, and if there is danger, repeated every two or three hours. By thus leading off the fever heat a great step is made towards a cure. It is well to fast, or in any case to eat only a little wholemeal bread and fruit. To drink water is not injurious. To get warm after the cooling baths,

it is good to sit in the sun, and if possible take exercise out of doors. Should the injured parts also have become hard, partial steam-baths are particularly to be recommended always followed by a cooling friction bath. The steam-bath promotes perspiration, which carries off large quantities of foreign matter.

From all this we gather that these injuries also induce a condition of fever; and it is to subdue this fever, that must be our first endeavour.

A young man, hardly twenty years of age while in the fields was stung in the left hand by a *poisonous insect.* The sting was not so painful, and the part but little swollen, so no further attention was paid to it. After some hours, however, rigours set in, and the entire hand began to swell. Soon the whole arm was swollen up, and the physicians called in, declared it to be a case of blood-poisoning and stated that amputation of the arm appeared unavoidable. As it happened, someone, acquainted with my method. was present, and so my system was applied, especially as amputation was not a very inviting operation for the sufferer. Local steam-baths were taken, followed by friction hip-baths, and also the hip-baths sometimes alone. This did not fail to bring aid and prevent the swelling from increasing. Between the baths cold-water compresses were applied. The patient also had to take plenty of exercise in the open air, and especially in the sun, in order to promote perspiration. In this simple manner every trace of the sting soon disappeared, and the general health of the patient was greatly benefited at the same time.

Diseases of Women.

OWING to the complicated structure of the female body, women are subject to a large number of complaints connected with the sexual organs. These ailments are frequently of an extremely distressing character.

Apart from irregularities attending the natural processes of menstruation, pregnancy, accouchment, as also during childbed and suckling, there are also certain other complaints often experienced. These are the direct consequence of the errors of the present age, with its voluptuousness, its pampering, its perversion; and these it is that lay the foundation of most injurious, chronic derangements of the female organism. They are the cause of a whole series of abnormal conditions, with the cure of which the medical profession for the most part struggles in vain.

Now, whence arises this host of diseases, these troubles peculiar to the female sex? They are to be traced to woman's wrong manner of living, to neglect of bodily health, to the want of regular exercise in the open air, to inattention to the natural and prompt satisfaction of the bodily needs, to an exaggerated quest after pleasure and to numerous other more or less important deviations from the path of nature.

All these influences, in their many combinations, readily affect the wonderfully delicate organism of woman, so that

it is not surprising that it loses its power of endurance and is afflicted by numberless ailments

How can it be otherwise? A comparison between the hardy peasant woman—even though not always living quite in harmony with nature—and the fashionable town-bred lady, is sufficient to prove the truth of my statement.

If, then, the female organism is so frequently the seat of innumerable diseases, partly inherited, partly due to individual error, of so much the more importance is my system of healing, which is able to successfully combat all these various complaints.

And it is a matter of congratulation, that it is precisely amongst women and girls, that my method has found such ready acceptance, not the less on account of its simple and inexpensive character. Restored health has offered them the surest guarantee for the reliability of my system. Without long discussion of the why and wherefore of the matter, it has convinced them of the marvellous effects of this treatment, based upon natural assumptions, and they have at once become most enthusiastic disciples.

At the same time, my new system of diagnosis, the Science of Facial Expression, has won a large circle of friends. It must the more readily win the sympathy of women, since it entirely obviates all *examination of the organs of generation,* so disagreeable for every female patient, whilst, nevertheless, enabling the precise condition of the body to be determined with surprising exactitude.

To discover the cause of the complaint, and to discern any deep-seated disease, is of especial importance with the female sex. Serious illnesses are not infrequently neglected, solely because women and girls hesitate to submit themselves to a medical examination.

And how thankful have women shown themselves, that my method, as already stated, *precludes once and for all, those unpleasant manipulations of the sexual organs with instruments.*

My method of treatment, by reason of its practical effects so readily accepted by women, has met with greatest success. Thus it is, as mentioned above, that amongst women and girls especially, my system has found the fullest acceptance—an adequate proof of its efficiency. Whatever the disease by which she is tortured, my method of healing is able to bring to the patient the long wished for relief.

Disturbance in Menstruation. Menstruation signifies a continual state of readiness to propagate. As long as there is no conception, the menstrual blood continues to flow, without its purpose having been fulfilled. In the healthy person, however, this process should be accompanied neither by pain, nor other unpleasantness. If such occurs, it may be concluded with certainty that there is an encumbrance of the body with morbid matter.

The natural process, as here observed in the female organism, is connected, as long years of experience have shown me, with the phases of the moon. In a woman in full health, the period, I assert, should appear at every *full-moon*, last 3 to 4 days, and reappear exactly at the end of 29 days. Women, who do not have the menses at, or about, this time, may be assured that they are suffering from an encumbrance of the abdominal organs, which is the greater, the further removed the time of menstruation is from the date of full-moon. Still more chronic will be the encumbrance, if the menses return at intervals of only a fortnight or three weeks, or if the menstrual flow continues for some fourteen—days—both symptoms being, unfortunately, of extremely common occurrence to-day.

Everything in nature is subject to a perpetual change; and so also we find by the menstrual process, a continual rise and fall, a constant increase and decrease. The times of the menses are of far greater significance for women and girls than in commonly supposed. Quietness and avoidance of

all excitement during menstruation, is strongly to be recommended to every woman who wishes to avoid disagreeable, or even serious, results, as I have frequently had the occasion to observe. This is particularly the case, too, with pregnant women. All their thoughts, all their actions, greatly influence the development of the fœtus. The illnesses which occur during this period are usually, as experience has shown me, accompanied by most serious results.

To the attentive observer, these natural processes going on in the female organism, bring other noteworthy facts to light. They supply a striking proof of the wonderful unity of the fundamental laws of nature. Upon this point, I have dwelt in detail in my hand-book of the Science of Facial Expression,* to which I would refer all who are interested in the subject.

As I have pointed out above, if the menses are too abundant or too scanty, if the menstruation remains away, or is irregular, this all forms an unmistakable proof of the presence of an encumbrance of morbid matter. How is this diseased condition to be cured? The New Science of Healing does not fail us here either. Imperfect digestion, caused by the accumulation of foreign matter in the abdomen must have preceded menstrual trouble; it is the constant and natural attendant of such. If we improve the digestion, see to regular evacuation of the bowels, and reduce of the abnormally high temperature in the abdomen, the disagreeable results of such will disappear of themselves.

My cooling baths, individualised according to the degree of encumbrance, an unstimulating diet, and my other well-known curative means prove most effective in disturb-

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* See **"The Science of Facial Expression,"** by *Louis Kuhne.* **A hand-book of a new system of examination to ascertain the state of the disease, based upon original researches and discoveries. Fully illustrated. Price of the English edition, paper-cover 10 s., elegantly bound 11 s. Louis Kuhne, 24 Flossplatz, Leipsic.**

ances of the menstruation, as has been amply proved by the cures attained.

The menstrual blood, as I am convinced, represents a superfluity of the humours of the body. Upon conception taking place, it is used for nourishing the embryo. And it is a fact, that the most critical days for the development of the embryo, are always those about the time of full-moon, that is, the days during which in healthy, not pregnant, women, the menses would appear.

Equally convinced am I, that those diseases which are connected with the uterus, become worse whilst the moon is crescent, and, on the other hand, grow better as the moon wanes. These processes again prove most clearly, how intimately man is bound up with nature.

It may not be uninteresting to my readers, to hear particulars of some cases I have met with, showing the importance of the times referred to.

The first is that of a woman with child, who had an indescribable dread of mice. One day a mouse ran over her bare arm, exactly at the time where in other circumstances she would be having her period.

How great was the woman's terror, may be judged by the fact that she could not dismiss the matter from her mind; it even entered into her dreams at night. When the child was born six months later, it had a mouse on its arm, that is, a place of exactly the size and form of a mouse, including a regular mouse's tail, covered with fine hair. The whole spot, however, was on a level with the rest of the arm, but covered with peculiar gray hair, just like that of a mouse.

In another case, a woman was pregnant with her sixth child. She herself, as well as her husband and five children all had dark hair. During her present pregnancy, a girl, to whom she was very much attached, was daily with her. This child had luxuriant, bright red, wavy curling

hair—a growth extremely rarely met with. The woman tenderly loved this girl, and cherished the ardent hope that her own child might have similar hair. The wish became most pronounced at those times at which she ussually had her period, and frequently she dreamt about the matter. In five months she was delivered of a child, a girl. As regards its features, it resembled its parents, but it had precisely the same striking growth of red hair as the child above mentioned.

A third case, and not less remarkable, is the following. A lady was taking a carriage-drive with her little lap-dog. Suddenly the animal attracted by some passing object sprang from the vehicle and fell so unfortunately that the wheel passed over its head. The lady was so shocked at the accident, that she could not forget the sight of the dog's crushed head. She was just a few months advanced in pregnancy; and when the child arrived six months later, it was still-born, the head having a perfectly crushed appearance.

I may cite still a fourth case. A woman bore a child having its mouth reaching from ear to ear. It died soon after birth. The cause of this malformation was a fright which the mother had got from the sudden sight of a mummer's mask with an immense mouth. She had been so frightened, that she had been unable to sleep for several nights. This had doubtless occurred during the time of the menstrual flow, otherwise the effect would not have been so pronounced.

My readers will thus understand, how the different characters and dispositions of children, are often dependent upon the spirits and circumstances generally, in which the mothers are during pregnancy at those periods where the menses would appear. Should they be sad and pessimistic, this mood will make itself apparent in the children sooner or later. Anger, timidity, courage, *kleptomania,* deceit,

avarice and all other good and evil traits, may be traced to the same cause.

Hence we must draw the conclusion, that all those external influences which operate on our senses, that is affect the mental organs, do not exert their chief power there, but by transmission through the nerves, operate upon the abdomen and abdominal organs. If the reader has carefully followed my theory of fever, he will see that I regard the abdomen as the starting point of the causes of all diseases. My theory, which always points to the abdomen as the principal organ of the human body, receives its best and surest support from the above facts, and my system of healing affords at the same time the most incontrovertible proofs.

Falling of the womb, Use of the pessary. This disorder also arises from the same uniform cause, the encumbrance of the uterus with foreign matter. The morbid matter here, also, causes internal heat and pressure, whereby the uterus, in consequence of its small power of resistance, is pushed outwards. The case is similar to that of intestinal hernia mentioned on page 289.

The real cause of the evil is unfortunately unknown to orthodox practitioners. They rarely go to the root of the matter, but simply insert a rubber ring or other *pessary* into the vagina, thus holding back the womb. How very many patients I have had who were wearing these pessaries; such may be temporary means of relief, but they can never remove the cause.

By using my system of treatment, the internal pressure, which caused the relapse, is soon diminished; the morbid matter removed, and thus the use of the pessary rendered superfluous, whilst the possibility of a renewal of the prolapse is, at the same time, prevented. And this applies also to

Uterine flexion. This is caused in a quite similar manner by the high internal tension in the abdomen. The latter becomes encumbered with morbid matter to such an extent, that the womb is bent from its natural position, that is, experiences a flexion. This disorder demands the same manner of cure. That this is the correct treatment, is proved by the successful results obtained by means of my method of healing. Surgical operations or manipulations, as experience shows, only result in lasting injury to the organs concerned.

Sterility. It is lamentable, the number of women who come to consult me, opening, their heart and pouring forth their grief at their marriage having been unblessed by children. Often they thing, too, that they are so healthy, notwithstanding. This is a gross error, of course for sterility always signifies the presence of a serious encumbrance, particularly of the sexual parts—the ovaries, Fallopian tubes, uterus etc. In some cases—according to the extent of the encumbrance—conception may take place; the inflammation in the abdomen, however, caused by the accumulation of foreign matter, is then so great, that the consequent tension, or pressure, causes a *miscarriage* or *premature birth.* Generally miscarriage takes place within the first four months of pregnancy, and is assisted by any such chance cause, as emotion of any kind, by a fright or blow, all of which tend to bring the morbid matter into more active fermentation. Tight lacing is another factor, favouring abortion.

In the country, where women live far more hygienically than in towns, miscarriages are scarcely known. I have known women who up to the seventh month of pregnancy, took an active part in dances, without suffering the least inconvenience afterwards.

Miscarriages can only be prevented by removing their cause, that is the encumbrance of the sexual parts. *Oper-*

ations, *injections* and other medical manipulations, which so outrage female modesty, can never secure the desired end. They may, indeed, so paralyse the innate curative power of the body, that even by my method a cure is no longer possible.

And here I would mention a fact too important to be passed over. It is, as experience shows, no matter of indifference at what time coition takes place. As everywhere in nature, so also in the case of human beings, the vitality is highest in the morning; the morning, therefore, is the time most favourable for fecundation. Coition, at any other time, for instance at night, not only excites, and thus weakens the nerves of both husband and wife, but should conception take place at all, the embryo will not develop with the same vitality as otherwise.

If the encumbrance is not too great and the body still has a certain amount of vital power, sterility can be cured. I have often been able by my method of cure, to put women in the position to gratify their inmost wish.

A lady who had already been married for eight years, had the strongest desire to become a mother, and yet had found no aid even from the first specialists. Finally she came to consult me. I explained to her, that her barren condition had its origin in a serious encumbrance of the abdomen, and that the first thing would be to remove this morbid matter. Only in this way could she attain fulfilment of her wish.

My prescription was, two to three friction baths daily, unstimulating diet and a natural manner of living. By this means her encumbrance was gradually diminished, and after a few months, she could make to me the happy anouncement that she had conceived. An easy birth and a healthy child were the further convincing proofs of the efficiency of my system of healing.

Sore breasts and absence of milk. The best, because the most natural, source of food for the child is the mother's breast. This is a most important organ, the functions of which, unfortunately, are to-day far too often ignorantly underrated. This leads to neglect of one of the most precious means for rearing a healthy race. How many mothers do we not find, who are wholly or partly unable to suckle their children. In the full sense of the word, such mothers are not really *capable of propagating* the species. Is such a thing ever to be seen in the case of animals? Do we ever find one that cannot give suck to its young, or, by so doing ever get sore dugs? Such is never the case. There must then be very definite reasons which produce this state of affairs in the case of human beings. One such reason is the abnormally full breasts before conception and suckling. It is well-known that many women whose breasts are thus highly developed are wholly unable to suckle a child, or are troubled with sore nipples during suckling. Such a fully developed bosom during maidenhood is never normal. On the contrary it is a sure sign that the body is considerably encumbered with morbid matter.

In the country, especially, we frequently have occasion to see how women bring children into the world without trouble, and suckle them likewise without any pain, although neither before their pregnancy, nor during the period of suckling do they have large, full breasts. Want of milk can also occur when a woman is unduly thin, a condition pointing to a still more deep-rooted chronic encumbrance. In such cases, especially when the mother is living upon what to-day is considered a good, nutritious diet, *i. e.* flesh-meat, wine, beer, eggs, milk etc., I have noticed that women because of "want of milk" are no longer able to suckle at all.

On the other hand, I have frequently made the experience, that an appropriate, unstimulating diet, and the

use of my friction-baths and steam-baths, will remove the inability to give suck, and likewise cure sore breasts.

A woman was delivered of her third child; she had been unable to suckle either of the two previous ones, although she was most anxious to do so. On the present occasion for some time before her confinement she had used my cure, and her wish was fulfilled, there being an ample supply of milk for the child.

Many such cases have occurred in my practice.

A case concerning the cure of *sore breasts,* selected from many others, may here be reproduced.

Some weeks after her confinement, a young woman was troubled by serious swelling of the breasts. The family doctor, as a last resource, proposed slitting them on the following day. The patient, however, could not make up her mind to undergo the operation and sent for me late the same evening. I explained to her, that in my opinion an operation would not only be useless, but even very dangerous, and that I believed myself to be able to assist her in another way within a very short time. She gladly followed my instructions, taking four friction sitz-baths during the night, each half an hour in duration, in water at a temperature of 55° Fahr. Next day her condition was very much improved. In a few days more, all the pains had disappeared; and after some weeks' cure, her condition was wholly normal, the cause of the disease, the foreign matter, having been expelled from the abdomen.

These cures speak more plainly than all the scientific disquisitions of medical men, and afford undeniable proof of the value of my method in cases of this kind also.

Puerperal fever. Thousands of happy mothers annually fall victims to this dread disease, pitiless and unsparing in its character; feared the more, since human aid has hitherto proved powerless to cope with it.

Its appearance is a certain sign that the organism is

heavily encumbered with foreign matter. This dangerous fever can only occur when such morbid matter is present in the body and commences to ferment. Only that woman, therefore, can be attacked by puerperal fever, in whose system, after the birth, sufficient foreign matter has remained to serve as exciter of disease. It is in no way necessary, for instance, that blood which has remained in the womb or cutaneous tissue first passes into decomposition (fermentation), and then in turn acts upon the foreign matter present to set up fermentation. If, then, we wish to cure puerperal fever, we must expel its cause, the foreign matter, from the body; and this may most readily be effected by friction sitz-baths.

On the day after her safe delivery, a lady was serious attacked by puerperal fever. The midwife had applied warm compresses, of course without effect. She was ignorant of the great internal heat which had been created in the body by the fermentation of foreign matter—heat which could naturally only be got rid off by cooling. I informed the patient, that I could certainly help her, but that I feared she would not carry out my instructions. "Prescribe whatever you will," was the reply, "I will do anything." I, therefore, ordered her to take three or four friction sitz-baths daily, each lasting from 15 to 30 minutes, with water at 64° Fahr.

As it was troublesome for her, however, to warm the water to the temperature mentioned, the patient took the water just as it came from the tap (at a temperature of about 50° Fahr. only). In other respects, my instructions were implicitly followed. Nor was the cooler water a disadvantage, on the contrary, it accelerated the cure, though the warmer water would have been more agreeable at first. Where the curative power of the body is not too low, however, cold water is always more effective. In eighteen hours the fever had abated, and the patient was

out of danger. In a week she was able to attend again to her customary duties. Here again was a proof of the astonishingly rapid effect of the friction sitz-baths. The foreign matter was drawn to the natural organs of secretion, whereby its further fermentation, as in any other case of fever, was prevented. After continuing the baths for some time longer, the patient finally became far healthier than she had ever been before. It will be seen that my treatment in this case ran directly counter to that which the orthodox practitioner would have prescribed. The medical men, as I have frequently found, order that the head be cooled with ice-bags, and the abdomen on the contrary kept warm, whereby they simply increase that which they wish to remove. It has always been a mystery to me, why the ice-bag should always be applied to the head – the very way to draw all the blood to this part. And yet everyone knows that the head is not destined to expel the foreign matter; that can only be done by the natural secretory organs. Hence the ice not merely cools, but renders the brain torpid. The organism at once attempts to compensate for this cooling action, by producing normal bodily warmth by means of an increased supply of blood. This flow of blood to the brain, will, however, naturally cause a rise in temperature; we thus have externally a state of torpor, whilst internally there is burning heat. Unless now these two states are able quickly enough to compensate each other, death will rapidly take place.

One more case. I was called one day to a lady who, on the day after her delivery had been attacked by puerperal fever. The physicians who had treated her, professors and high authorities in the profession, had not been able to cure the fever, which had now changed from the acute state into a chronic one. Finally, after about a week's treatment, the *brain became affected,* and the patient became delirious, so that the medical attendants feared the worst.

Such was the sorrowful plight in which I found the patient, as, in reponse to a telegram, I arrived to take up the case. The first work was evidently to cure the latent, chronic fever, which I was soon able to do. A few friction sitz-baths, each of one hour's duration, were sufficient to subdue the heat in the abdomen, and bring the patient into a normal mental condition.

In this short space of time, the body naturally had not been freed from the morbid matter, causing the fever, still the lady was now out of danger. She continued my baths and dietetic prescriptions for some time longer, and has since been in the best of health, as I have often had occasion to learn, from the relatives residing here in Leipsic.

How to bring about Easy and Safe Parturition.

IN the kingdom of nature, in the great world of ceaseless activity, governed by eternal and incontrovertible laws the exact conditions under which each individual creature may exist are clearly set down.

Let us, then, observe the circumstances under which those animals, that have not been degenerated by contact with man, bring forth their young.

If we contemplate a dog, a hare, a cat or other animal in a free state we find that such a creature never requires any assistance in parturition; and that this proceeding is never painful, nor of long duration. Nowhere do we see such animals exhibiting any kind of fear, or uneasiness, at the approaching birth. That so often dangerous act, in the case of human beings, in the animals kingdom passes by without trouble, causing no derangement whatever in the health of the animals.

Not rarely I have carefully observed such creatures, and I have always found, that almost immediately after bringing forth the young they returned to their usual manner of living, as though nothing whatever had happened, except that they displayed the greatest possible care for their offspring. I have never remarked that Nature, as seen in the healthy animal world, ever varied from this course. I remember the case of a doe-hare, which had just brought forth two young and was disturbed in the act by a sports-

man. She rushed off, as though in a normal bodily condition, but was shot. Upon examining her, it was seen that she was with young, and upon being cut open, the young animal was removed from the body in a living state. The other two, which had just been born, were found upon a search being made.

With women, on the contrary, easy parturitions are of most seldom occurrence. When we see such difficult, painful births, *miscarriages,* and all kinds of disorders during pregnancy happening daily, we surely have reason to view the matter gravely. Parturition without the aid of a midwife is a thing scarcely to be imagined to-day; the act of birth is, in fact, more an artificial, than a natural proceeding. Moreover, in order to avoid disastrous consequences, the woman is obliged to keep her bed for a longer or shorter time after the delivery.

All these deviations from the immutable law of nature, must necessarily have a deep-lying reason; they must arise from conditions which run altogether counter to natural laws. Nature never causes such disturbances herself, her procedure is unchanging. Man alone interferes with the natural organism, controlled by definite laws, and in his ignorance disturbs the work of nature. It is, then, not Nature and her laws, which have become insufficient for man's well-being; it is man himself who is always approaching nearer towards imperfection.

It is no matter of wonder, then, that this rejection of natural laws is avenged by the human race being brought ever nearer and nearer to the brink of physical ruin. Only when mankind began to deviate from the course of nature did it become gradually diseased and encumbered with foreign matter. It has soon discovered in what a fatal way this transgression of the laws laid down by nature, has reacted upon the propagation of the human species. Paradise has been lost—that earthly happiness, revealed

in the consciousness of perfect health, which is only attainable where man lives in the closest harmony with nature and in obedience to her laws.

Summarising all that has been said above, we arrive at the following: "Really healthy mothers will always have an easy time when pregnant, safe births, and healthy children." The word "healthy," however, must here be understood in the sense already explained in this book, that is, the state of absolute freedom from morbid matter.

The child will only be truly healthy, however, when the father is free from all encumbrance. Nature always endeavours to form the embryo developing in the womb, of the best elements of the parents. A direct inheritance of germs of disease, consists, in many cases, simply in certain organs of the father or mother, which have been diseased or encumbered at the time of procreation, being defectively developed in the child; the offspring thus enters the world in an imperfectly proportioned state. If, now, there is an encumbrance of foreign matter in the child, as is practically unavoidable to-day, with vaccination and artificial food, this morbid matter will always tend to accumulate and force its way, where there is least resistance offered. Thus it is precisely in the relatively weakly developed organs, where the largest accumulation of foreign matter will take place. In the child, therefore, we find the same disease as in the parents. By means of natural treatment and careful observance of natural laws, we are, however, enabled to expel all such foreign matter, and thus gradually strengthen and keep healthy those organs which are weaker than is normal, or which are especially exposed to encumbrances. In this manner, it is possible in time to create a healthier and hardier race.

Frequently it may be seen how, where the parents are heavily encumbered, the children also enter the world in the same state. "By their fruits we shall know them,"

may here be said with truth. The unnatural manner of living imposed upon the children has brought it about, that the human race becomes more and more degenerated from generation to generation.

But there are other circumstances which cause serious injury to the health.

Nowhere in nature do we ever find that an animal becomes weaker, uglier or even deformed through bearing young. How different is it with the human race. It is almost the rule that a woman, even after the first confinement, begins to age, or to become altered in form, for instance by an *abnormally large abdomen*. The blame is always attributed to the pregnancy, the parturition and suckling of the child. After every successive delivery, the majority of women, lose more and more in beauty, although living under quite healthy conditions as regards occupation and diet.

I will here point directly to one cause of this. Never in nature, except in the case of mankind, do wee see the female, after having once conceived, courting a further copulation; on the contrary she will absolutely refuse to allow it. This is in accordance with the law of nature. Copulation is for the purpose of conception, and not merely for pleasure. During the act, there is an increased flow of blood towards the sexual organs, which, if the female has already conceived, always acts injuriously upon the embryo in course of development. In particular, also, the female herself suffers, since nature always endeavours to keep the womb free from everything injurious to the embryo. Disobedience to this natural law expresses itself in women, through the speedy decline of the bodily vitality and in the hundred troublesome diseases of women.

Those troublesome accompaniments of pregnancy, are frequently the direct result of this trangression of Nature's laws. Thus we have morning vomiting, nausea,

toothache, change of complexion, feverishness-alternating with chilliness, inclination to melancholy and tears, great nervous irritability, disgust at accustomed foods, abnormal appetite. In some cases, of course, these symptoms may be due to an inherited encumbrance. The healthy instinct of every woman forbids her, as experience shows, to have further coition after she has once conceived. It is our present-day customs, and the morbidly increased sexual desire of men, caused by encumbrance of the system with foreign matter, that bring about this unnatural practice.

It is an old and well-known fact to farmers, that an unnaturally increased sexual impulse amongst cattle, is a sure sign of a disease having broken out. And it is the same with man, as anyone can observe who will look about him. I need only mention here the obnormal sexual excitement on the part of consumptives.

Sexual impulse in healthy man is something altogether different from that unbridled lust which we see so often to-day. Free from all erotic thoughts, free from all unnatural passion, the sexual impulse is there in man also only for the purpose of maintaining the species. Never must it become a necessity, which when not satisfied for a period causes discomfort. Naturally it is only he who is healthy and keeps his body pure by unstimulating, and natural diet, that is able to judge correctly of this condition. Whoever, then, would not have his will in conflict with that of Nature; whoever would control his body, so that his sexual impulse is kept within proper bounds, so that that which under other circumstances would be the severest constraint, is to him a benefit—let such a man return to nature. If he follows the rules of health laid down by me, and thus frees his system of the foreign matter encumbering it, he will attain that which will render him contended and happy.

Everywhere to-day we see unnatural births of various kinds. First we have miscarriages and premature births.

Here a breech-birth, and here the child reaches the vagina in a side position. Then again we find children with unnaturally large heads, whilst the generative passage of the mother is so narrow, that birth without artificial aid is impossible. In other cases again, the activity of the labour pains is far too feeble. In short, a number of unnatural occurrences happen which can all be explained by the encumbrance, of one kind or another, of the mother with foreign matter, and the inherited encumbrance of the child.

A wrong position of the child in the womb is always caused either by the encumbrance of the mother, or through inappropriate work or occupation, especially during the first half of the period of pregnancy. The child is simply pushed out of the correct position by such accumulations of morbid matter, or as the result of some unsuitable occupation, whereby the abdomen is stretched and strained. When the generative passage of the woman is narrowed by the accumulation of foreign matter, a difficult birth must certainly result. The child itself may also be so heavily encumbered (supposing the parents were also in such condition), that it is of abnormal size, at birth, especially as regards the head. This also, naturally, causes difficulty in parturition. An encumbrance of the generative passage consists in all the muscles, sinews and ligaments being so permeated with foreign matter, that they appear swollen and lose considerably in elesticity. An easy birth on the other hand, demands that the whole system be in a perfect condition of health in the true sense of the word.

Every muscle which is encumbered, suffers considerably as regards its functional ability; and if, as is the case with the labour pains, it is convulsively contracted and more exerted than its encumbered state admits of, great pain will be caused. Thus, severe pain at birth always results from an encumbrance with foreign matter, or a disease, in our sense. *Adhesion of the after-birth* is due to the same cause.

Can we, then, wonder that all women who are encumbered, have the greatest fear of child-bearing? Such fear, however, is by no means natural, and is simply the result of the encumbrance. A really healthy woman knows nothing of this oppressive feeling. Anxiety is the voice of instinct, which, though often suppressed, yet in such crises as child-birth, clearly shows us that we have made wrong use of the body and health which Nature has given us. But who is able to-day to interpret this voice aright? If there is anyone who still objects, that there are nevertheless doubtless many cases where operation or manipulation is a necessity in child-birth, let such read the following.

A woman, aged 36, who was about to give birth to her second child, had already passed two days and two nights in labour and yet the child never moved in the womb. The midwife was of opinion that medical aid was necessary, or the birth would be impossible. A very skilled physician, well-known as an accoucheur, was therefore called in. For four hours he operated with all kinds of instruments, and finally decided that owing to the wrong position of the child, it was impossible for it to be born without danger to the mother. The poor woman would, as she said, rather die than endure the tortures of this obstetric assistance any longer. Without having accomplished anything, the physician took leave, declaring that the woman would die, since the child could not be got out. But Nature had decided otherwise than this obstetrician. After 24 hours continued labour pains the child was born, without the operation of any physician, but only with the assistance of the midwife. Who had here been of more use, the famous physician or—simple nature? The unnatural surgical operations, however, were not without their unhappy results: the woman after the delivery had to lie nine weeks ill and her life was even despaired of. The instrumental manipulations had nearly lamed her

and it was only her strong constitution that ultimately brought about her recovery.

Owing to the general chronic degeneration of the human race, complications, I admit, may occur at parturition, which neither physician, nor obstetrician, are able to get over. As the result of my experience, I am of opinion, that in all such cases it is best to quietly leave to nature. No one can help better than she. To aid the inactivity of the labour pains, however, I know of no better means, than the friction sitz-baths. *Earth bandages* round the abdomen (cp. page 116) are also an excellent remedial and palliative agent. Humid clay or loam is spread not too thinly upon a linen cloth and this laid with the earthy side upon the abdomen, a woollen cloth being bound over the top. The clay may be renewed every hour or two.

Through over-hastily undertaking operations at births, thousands of women have been sent to an early grave. How happy would so many tortured mothers be, and how much misery would many families be spared, if instead of to the obstetrician with his mania for operating, everything at the bedside were left to our all-caring mother, Nature. It is always the fault of the woman, if she comes in a situation, where a birth appears impossible without the use of instruments. She had long enough the means of preparing for a safe birth, since she soon saw she was pregnant. Certainly she must also understand how to use the means offered, and to make the best use of them at the right time. Anyone knowing my method, understands what is to be done in order to procure easy births. During the last few years, a large number of further cases have occurred which most clearly confirm my teachings. Never in one of such cases have my friction sitz-baths and dietetic regulations failed in their operation. Everywhere, where my treatment was applied in right time, astonishingly easy births followed.

In the letters of thanks addressed to me, unreserved

acknowledgement of the efficiency of my friction sitz-baths is everywhere to be found. After all, it must be evident, that it is much easier to obviate a painful birth in right time, than to get aid only in the moment of paturition. The continually increasing need of artificial aid at births, speaks only too clearly and earnstly of the serious and steady spread of chronic disease.

Those who would have safe deliveries and healthy children, must, before all, see that their own body is free from foreign matter, that is, is healthy, at the time of coition. And one can only be healthy, if all foreign matter has been expelled from the body, and a renewed encumbrance obviated by following the advice laid down in this volume.

I had a woman under my treatment, who had been suffering from articular rheumatism for a considerable time. She was pretty heavily encumbered with foreign matter, especially in the abdomen. She had already had five children, the circumstances of birth in each case being most distressing. The delivery had always occupied from two to three days, the activity of the labour pains being insufficient. Each time, therefore, the woman had to undergo the most horrible pain, until the accoucheur was able to procure the parturition by the aid of his forceps. During the period of pregnancy with her sixth child, she had followed my advice and taken two to three friction sitz-baths daily. The result was, that the sixth birth, which in other circumstances would certainly have been the most difficult, was the easiest. The act of parturition itself lasted scarcely an hour; the labour pains from the first followed in proper series and were practically painless. (See further Reports of Cures, Part IV.)

This result was altogether incomprehensible to the woman. When I had told her before the birth, that I expected such a result, she sceptically remarked that I would not be able to invent painless deliveries. Afterwards she

lamented to me that her age was such, that she could scarcely count upon another conception. And yet, now that she knew how to bear without pain, she would so like to have more children. She also much surprised at being able to give the child the breast this time, a pleasure she had never been able to enjoy before.

And all this had a quite natural cause: the woman since hearing of my system lived strictly in accordance with Nature and used my baths regularly. Her body, formerly heavily encumbered, became, in consequence, tolerably free from the foreign matter; an increased physical and mental capacity was the direct result.

Similar happy results were obtained by another lady, who upon my advice used my system during her pregnancy. After following the treatment for seven months, the delivery took place and was likewise practically painless, lasting about half an hour, no midwife being present.

A like satisfactory case was that of a lady, who in consequence wrote me the following letter of thanks in September 1890:

"I am 28 years of age, and was suffering from disorder of the bladder and kidneys since my 15th year. At first I was for eight weeks in the T—Institute of this town, with the only result that my catarrh of the bladder during this time became more unbearable. I could only keep in a lying posture, for to stand or walk was impossible on account of the most horrible pain.

"This went on for four weeks, so I went to the clinic in L—street, where after a considerable stay I secured a temporary alleviation of my painful malady. As, however no one had ever attacked the root of my complaint, it returned again in the course of a year with renewed vigour. At the time, I was staying in Chemnitz and had to go to the hospital there, where I remained for over

three months. I was treated, without the least success, with salicylic acid and lunar caustic, with compresses and electricity. In April 1880, therefore, I went to Leipsic and had at once to go to the hospital, again. Here for four weeks I was treated for a uterine complaint, likewise without any success. Often I scarcely knew how to get from the hospital to my house, so great was the pain.

I left the hospital, because I saw no chance of recovery there, and for four years sought aid at the hands of Dr.M— of Leipsic. He likewise cured me of the catarrh of the bladder and inflammation of the womb, and sent me for three years consecutively to Franzensbad, where I took mud and charybeate baths and drank the waters. But it was all without permanent result. At my last stay in Franzensbad I was even sent back here by the physician, because in his opinion an operation was absolutely necessary. Dr. L— of Leipsic, therefore, operated me, and my condition for the time became bearable. Nevertheless, I still always felt the presence of my old complaint and clearly remarked how it had been suppressed, by the operative treatment, but in no way radically removed from the body. From time to time I was obliged to apply compresses and the like to get relief, until finally I was compelled again to seek medical aid. I went to Dr. Z— of Leipsic, but after a year's treatment felt no better. Dr. Z. declared, at last, that I was suffering from a floating kidney, and that there was nothing further to be done; in any case, however, he would advise me to consult Professor S— of the same city. This gentleman examined me daily for a whole week, at the end of which he likewise said that aid was no longer possible and sent me away.

Thus, bereft of hope, in July two years ago I came under your care. The very first days of the treatment were sufficient to rid me of my unbearable pains, and in four weeks I could again work. I have, by your method,

been able to keep health and strength up till the present time.

Even during the first year of the cure, I felt so physically refreshed and strengthened, that I married, despite dissuasion on all sides, and the opinion of physicians that I would not come through child-birth with safety. Your advice and my own experience taught me better, and everything has happened just as you foretold. I married, followed your instructions conscientiously during my pregnancy and to general surprise had a remarkably easy and safe delivery without a midwife. All this I owe to your simple system of healing.

Leipsic. (Mrs.) Louise B—

Management after the Birth.

FOR the really healthy woman, advice as to how to manage after the confinement would, of course, be superfluous. Not only the animals, but also the women amongst many uncivilized races are able to rise and go about their customary duties almost immediately after the birth. It is very seldom, however, that we find the women of civilized nations able to do this; on the contrary, it is the custom to keep them in bed for a considerable time after delivery. Formerly nine days was the usual time; now many physicians order twelve days. It is less the want of strength on the part of the mother, that necessitates this, than the abnormal slowness with which the generative organs assume their former position. But this long period of lying in bed is undoubtedly in many ways very injurious to the health. The process of assimilation becomes weaker, for the digestion suffers from the inactivity of the body—a fact which is proved by the obstinate constipation which nearly always occurs at this period. Nevertheless, to rise before the generative organs have returned again to their usual position is also injurious, causing an abnormally large abdomen, such as is so frequently observed in women who have borne several children.

I have reflected much upon the best manner in which to get over this evil, without keeping the woman so long

If possible, the mother should give the child the breast. The supply of milk cannot be forced by means of immoderate eating and drinking or the like; on the contrary, this will probably diminish the flow. The natural precept must be observed here, as elsewhere, only to eat and drink, when there is hunger and thirst. As a matter of course, the mother must keep to a natural diet. In mothers who are in any way healthy, this diet will produce an ample supply of milk of the best quality (cp. p. 339).

Treatment of the Infant during the First Months.* Bringing up of Children.

IF we attentively follow the course of nature, and observe the relation of the mother and child, we at once recognize that for a long time to come there must exist a close connection between the two. Especially during the first years, the relation of the infant to the mother is a most intimate one, necessary, to begin with, through the need of warmth. It is a great mistake to remove the infant from its mother, and thus withdraw from it the warmth so beneficial for its health. Unfortunately far too many mothers entirely overlook this extremely important point.

I remember being once called to a family, where the youngest child, an infant of three weeks, would no longer lie quiet in its cradle. The mother was consequently very anxious, the more so as the baby's digestion was also altogether out of order. The natural warmth of the mother, and three daily friction hip baths, secured the infant rest and brought it into a normal condition of health again.

Rearing of children. As already remarked, most mothers nowadays are wholly unable to give suck to their

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* **"The Rearing of Children"**, by *Louis Kuhne.* A word of warning to parents and teachers. Published in German, Dutch Danish and Hungarian. Price of the German edition 6 d. Louis Kuhne, 24 Flossplatz, Leipsic.

children, or have only a limited supply of milk. Hence it is we find so many poorly developed children. The best substitute for the mother's milk is that of a nurse. But unfortunately this by no means affords a certain gurantee for the health of the child, for if the nurse is not healthy the child becomes still further encumbered with foreign matter, in addition to that wich it has inherited. We can, of course, judge of the condition of the nurse by means of the Science of Facial Expression; but a really healthy nurse is most difficult to find. In most cases the child is fed artificially, but generally the food is neither properly selected, nor properly prepared. If cow's milk is given, this should only be warmed, but not boiled, for boiled milk is far more difficult to digest. To kill injurious organisms is here a matter of no importance, and proof of this is very easy to adduce.

The most nourishing foods are naturally those which are most easy to digest. As long as the digestion is in order, the digestive juice has quite sufficient power, to destroy and expel all that is injurious to the system. Whilst unboiled milk is extremely easy to digest, boiled milk remains much longer in the digestive tract, and consequently occasions far more intense fermentation, than would be the case with normal nourishment.

This is, without the least doubt, the explanation of the many infant diseases and ever-increasing infant mortality. Infant-foods and extracts are simply a means of increasing digestive disorders; they distend the child's stomach, disturb the digestion and cause extreme restlessness. Milk boiled according to the instructions of Professor Soxhlet, and the sterilised *preserved milk,* frequently recommended by parish authorities of late, are quite as injurious for children as milk boiled over the fire. For it is precisely that which the learned professors try to kill by boiling, that renders the milk easier of digestion. As soon as the milk reaches

the digestive canal it should commence to ferment. In nature, of course, we never find the milk first coming in contact with the air before being sucked by the child. Milk is nothing else than a nutritive juice, and should pass directly from the mother's breast into the body of the child, without ever coming into contact with the air. As soon as the latter occurs, a change takes place, which acts injuriously upon the digestion of the child. Where the milk, however, is fresh. the change is of little significance. But in any case caution should be used, since the cow also will probably be far from free of morbid matter. It is quite a mistake to imagine, that a fat, well-fed cow, kept summer and winter in the stall, will give the best milk. On the contrary, such a cow's body is morbidly swollen out, and the milk correspondingly deleteriously affected. The world is, in fact, condemned to drink a product saturated with morbid matter, for healthy cows are scarcely to be found at all in civilized countries. The best substitute for cow's milk is oatmeal gruel. This should be made of good, coarse, undried and not bitter oatmeal, and passed through a sieve. Neither salt, butter, nor sugar should be added. Oatmeal is everywhere more or less dried, in order that it may keep better, before coming upon the market. This, however, causes the meal to lose in digestibility, so that it is no longer fit for feeding infants. The oatmeal should be altogether undried. Where such cannot be had, it is best to buy hulled oats and boil these to get a gruel. If these also are not to be bought, whole oats may be taken and crushed in mortar, or ground in a *mill* (see advertisement at end of this book) and then boiled to obtain the gruel. This latter gruel is the best of all for children, but there is the trouble of grinding the oats. Nevertheless, this should not disencourage anyone and after a few trials it will be found comparatively easy. I have dwelt fully on this subject, as also on the bringing

up of children in general, in my little pamphlet, already mentioned, "The Rearing of Children."

It is most regrettable that so many parents find it such a troublesome thing to bring up their children. The boys will not learn, but have always their thoughts upon something else: are ill-mannered, passionate, irritable; and yet the parents and teachers take the greatest pains with them. It is regarded as inexplicable, that the education should be so difficult, and as no reason can be found, it is finally set down to the spirit of the age, without any thought of there being quite another cause. Wherever the youthful body is encumbered with foreign matter, the function of the brain and of the whole body will be unnaturally influenced and changed. If, on the other hand, the encumbrance is get rid off, the fully natural condition of health will be restored. I have not infrequently observed in my practice, that the worst brought up children were changed by means of my cure, into the quietest and best mannered children possible. Boys who could learn positively nothing, who sat for hours over the simplest task without doing anything, were completely changed upon the foreign matter being expelled from the body. They were again able to learn and quickly comprehend, were no longer languid and tired, and were in every way again the joy of their parents. Anyone who knows what a pleasure it is to bring up healthy children, and how little care and trouble it involves, will certainly not neglect to procure for his own the first conditions for such happiness. It is a sacred duty of all parents to learn my system of cure and especially, my method of diagnosis, the Science of Facial Expression. In the latter they have the means of perceiving immediately and with infallible certainty, any encumbrance of their children with foreign matter.

There is another point which is far too important to be omitted on any account whatever. I refer to the in-

creasing *sexual desire in youth,* and its natural result, *onanism.* It is a sad fact, that the origin of this youthful sin has never yet been properly recognized; on the contrary, misled by foolish prudery, people suppress all reference to such matters. The evil will never be got rid of in that way. He who will improve the world, must speak openly of its errors. In the country, where nature and practice still go hand in hand, it has long been recognized, as already stated on page 348, that undue sexual desire on the part of animals is a sign of a morbid condition. Now man is subject to precisely the same laws, whatever some people may say about his occupying an exceptional place in nature, and hence being under exceptional natural laws. Just as in the case of animals a morbid condition (*i. e.* an encumbrance of the body with foreign matter), as has been proved, produces an unnatural sexual impulse, so also in man. Self-masturbation is always a clear sign, that the sexual organs are encumbered with foreign matter. If this morbid matter is gradually expelled from the body, the unnatural desire will disappear of itself. Whipping the children, as many parents do, for playing with the sexual parts, is useless. The only way to cure the continual irritation is to remove the cause, that is, expel the foreign matter. Even if by strengthening the will of the children, we may get them to stop the vice, nevertheless, the inward compulsion to it still remains, and can never be got rid of until the cause has vanished. My long experience in the treatment of masturbators has brought me to the conviction, that there is no more appropriate means of cure except my friction baths, together with unstimulating diet and a natural manner of living. Thus my system is an *excellent means of promoting a higher degree of morality amongst our children.* And this is a matter of such immense importance, that everyone should look upon it as his bounden duty to convince himself of its truth.

Part IV.

Reports of Cures and Letters of Thanks.

IN order by actual facts to show those readers who may be resident in more distant places, what extraordinarily successful results have been attained by means of my method, I here print over 100 true reports of cures and letters of thanks concerning all kinds of diseases. The testimonials have for the most part been absolutely unsolicited. May they contribute their share in spreading the truths of the New Science of Healing, to the benefit of suffering humanity!

No. 1. **Nervous debility, Sleeplessness, Chronic inflammation of the bowels, Gallstone.** Mrs. R. was suffering from *chronic inflammation of the bowels* and could not obtain evacuations without the use of medicines and enemas. At the same time she was suffering from *gallstones*. From month to month she became more and more corpulent, until her condition was no longer bearable. She was highly nervous, obtained, *no sleep*, and suffered from pains in the region of the liver, in consequence of the *gallstones*, besides being troubled with an absolute *want of appetite*. The physicians who were treating her advised an operation for gallstone as a last resource. Having heard so much about unsuccessful operations, however, she came, in this deplorable condition, to seek aid of me.

Two to five friction baths daily, one or two steam-baths weekly and non-flesh diet—these were again the remedial agents of my uniform system of treatment. During the first week the cure went on slowly. In the second week the appetite, stool and sleep be-

came normal; during the third week the *nervous -disorder* disappeared. The fourth weeck was marked by the immense quantity of obnoxiously smelling, black (gangrenous) dysenteric fæces which was evacuated. The body had lost nearly 30 lbs. during this time and the previously excessively *large abdomen* was now normal. After five weeks' treatment the gallstones began to dissolve, and were clearly to be seen in the form of gravel in the urine discharged. In seven weeks the patient was cured.

No. 2. **Pulmonary catarrh, Cold feet, Affection of the stomach, Liver disease, Pharyngitis.** Mr. H. of L., aged 27, used my method for the above complaints, giving special attention to the friction hip-baths, and subsequently also friction sitz-baths and unstimulating diet. The cure was most rapid. The digestion and *affection of the stomach* were already better on the second day, in consequence of which there was a continual improvement of the other attendant troubles going on during the next days. After three weeks the patient was cured of all his complaints, and what surprised him most was, that his feet had again attained their normally warm condition without any local treatment having been employed.

No. 3. **Cancer.** A Brazilian, 25 years of age, was suffering from *cancerous ulcers* which had been developing for 8 years and now extended from neck to stomach. After a meal they always bled, and from the throat of the patient there was so offensive a smell emitted that no one could come near him. Was it a matter of wonder, then, that the patient was haunted with the idea of committing suicide?

Encouraged by some acquaintances who had been cured by means of my method, he determined to try it also. During the first three months he seemed to grow worse, as the cancer nodules dissolved, causing great pain. Nevertheless, he persevered, and at length traced an improvement in his condition. At the end of a year the young man was well again. He is now a strong, cheerful man, and an enthusiastic pioneer for the New Science of Healing.

No. 4. **Jaundice, Debility, Headaches.** In the spring of 1887, the young daughter, aged thirteen, of Mrs. L. of Leipsic, complained of great lassitude, distaste for work, *general debility, headaches*—in short, of feeling altogether out of sorts. After some days the white of the eyes turned yellow, this sickly discoloration spreading soon over the whole face and neck, and finally all over the whole body. At the same time, it was clear that the girl was in

a high state of fever, which spread from the abdomen throughout the entire system, making itself externally visible, however, at the head, in accordance with the nature of the fermentive process. The treatment was unstimulating diet and three friction baths daily, to draw off the fermenting matter and open the pores of the skin. In a fortnight the *jaundice* was fully cured.

No. 5. **Tuberculosis of the bone.** Mr. A. H. of W. was suffering from *tuberculosis of the bone,* and had been treated with iodoform, carbolic acid, corrosive sublimate etc., upon the allopathic system, for over nine months without any success. Both legs had been operated upon a number of times, several pieces of bone having been cut out. Through all this local quackery the condition of the patient had become so wretched, that he could no longer walk at all. In this condition I took up the case. In three months the sores at the legs healed over, and the spongy, swollen bones became firmer and thinner. The patient was soon able to walk again, and in three months could say that he was fully cured.

No. 6. **Sciatica, Crippling, Lameness.** Oswald Z. of K., a boy of twelve, fell ill with *sciatica* after having suffered from severe cold, accompanied by coughing. His complaints in consequence of the unnatural treatment with drugs *extension-bed* etc., by various physicians, became so much worse, that the poor boy's hip grew perfectly hard and stiff, and rendered him quite lame. The right leg was less developed and thinner than the left.

I undertook no local treatment of the *stiff, crippled leg* at all, but as chief curative agents ordered friction baths and unstimulating diet. The results of this treatment were soon felt. In a fortnight the boy was able to walk again without either crutches or sticks. In a month the hard hip had again become normally soft and all trace of crippling had vanished. The leg was now as easy to move as the left. Within six months the undeveloped parts of the leg and foot were quite normal again.

No. 7. **General debility, Pains in the back, Cold hands and feet, Poverty of blood. — Easy parturition.** Mrs. E. of W. near P. suffered from a whole series of illnesses, and was at the same time *enceinte.* The doctors had not been able to help her in the least, and, therefore, she set her last hope on my method. I prescribed a hip bath and two friction sitz-baths daily, after which she was to warm herself in the sun. I further ordered the simplest unstimulating diet. After some months Mrs. E. came again to me

and reported as follows: She had carried out my instructions exactly and within a week remarked an improvement in health, which increased the longer she continued the treatment. Just a month ago she had been delivered of a child, and this birth, to the astonishment of the midwife, hat been the easiest she had ever had. Whereas formerly there had always been trouble with the *after birth*, the expulsion of which was each time attended by a flow of very thick, gangrenous blood, on this occasion there had been no difficulty at all. The child, too, was perfectly healthy. Formerly she had never had milk enough for the baby, whilst this time she had an ample quantity. Her appetite, also, was much better than before. She clearly saw that this manner of living was not only far simpler, but also much healthier than the ordinary.

No. 8. **Gland-tumour.** E. K., a girl of some nine years, was afflicted with a swelling of the glands on the left side of the neck, which in time grew to the size of a large egg. I prescribed daily friction hip and sitz-baths each of about half-an hour's duration, and weekly two partial steam-baths; I likewise ordered a suitable diet. At first, the tumour was dark red, turning bluish after a time. After the process had gone on for some three weeks, the child found the steam-baths disagreeable, her head being forced to one side by the tumour, so that she could not move it. Instead of the steam-baths, hot water compresses were therefore used, the water being as warm as the skin could bear. The movement of the morbid matter could now be clearly perceived, for the pus oozed through the skin and soiled the cloth wrapped round the neck, although there was no open sore. At length two small sores about the size of a pea, appeared and discharged a quantity of pus. The tumour now rapidly decreased in size, a second one forming, however. The latter, nevertheless, soon disappeared, after having discharged its matter through the sores formed by the first one. In a month the disease was so far cured that the child could go to school again. In five weeks all the troubles were over and the head and neck could again be freely moved.

The girl had scarcely felt any pain the whole time, this being prevented by the partial steam-baths and hot compresses on the one hand, and by the friction sitz-baths on the other. No scars were left.

No. 9. **Cancer of the breast and nose.** Mrs. S., the wife of a butcher of Reudnitz, Leipsic, had tried every possible remedy for her serious disorder, *cancer of the breast and nose*, but all in vain.

One day someone called her attention to my system and she desired me to visit her. I did as requested and found the woman in a deplorable condition. On the breast was a deep sore, putrescent and corroding, and so large that it could scarcely be covered by the hand. Half the nose was already destroyed, and on the forehead two large red *cancerous tumours* had formed, which were on the point of breaking. After making an examination, I at once gave the necessary directions for treatment, which proved most successful. First the tumours on the forehead disappeared, then the breast healed, and finally the nose. As the patient, after some months' treatment, came to report her progress, her appearance was still most painful. To-day she is again a comely, one may say, good-looking woman. And the miracle—for so it must seem to all who saw this patient during the worst period of the disease—was worked simply by means of natural diet, hip and sitz-baths and profuse perspiration, without any local treatment whatever, whether of the breast, nose or forehead.

By consistently carrying out the treatment I prescribed, Mrs. S. was cured of her disease in less than nine months.

No. 10. **Open sores on the legs.** Mr. F., a school-teacher in Brazil, writes to me of the astonishing success he had with my method. He had been suffering for seven years from *open sores on the legs,* and had been to one doctor after another. His hard-earned money was being rapidly spent in chemists' bills and yet the sores were becoming ever larger and more painful. The dreadful agonies which he had to undergo rendered him often quite unfit for work.

By chance he came into possession of a copy of my text-book of the New Science of Healing, and after perusal, decided to make a trial with my system. He only took hip baths, and after about a year he was fully cured. By means of friction sitz-baths he would probably have got well still sooner.

The patient contributed an account of his cure to a German journal in Porto Alegre.

No. 11. **Disease of the kidneys and bladder, Dropsy, Liver disease.** Mrs. B. of P. had been suffering for years from *disease of the kidneys and bladder.* The orthodox treatment not only brought about no improvement, but did not even prevent *dropsy* making its appearance. Mrs. B. now decided upon trying my method. I orderep her two hip-baths and one friction sitz-bath daily, together with natural diet, excluding soups, however.

Crises soon began, and for weeks the patient was altogether without appetite. She lost all courage and would have given up the treatment had not her daughter persuaded her to continue it. She was well rewarded. In place of the hip-baths, friction sitz-baths were also prescribed, in order to promote a quicker cure. The *dropsy, kidney* and *liver diseases* gradually disappeared. A short time ago Mrs. B. presented herself, fully, cured, so that no one would ever imagine how ill she had formerly been.

No. 12. **Heart disease, Muscæ volitantes (black specks before the eyes).** A most disagreeable disorder is that in which black specks are seen floating before the eyes, although there is no external object there. This disease is caused by foreign bodies, cellular particles being deposited in the vitreous humour of the eye, and casting minute shadows on the retina. It is obvious that by cleansing the system, these foreign bodies will disappear also. This is confirmed by the case of Mr. F. H., a solicitor at B., who reported to me, that during the course of the treatment, which in the first instance he had commenced to cure an old deeply seated heart disease, his *muscæ volitantes* disappeared also.

No. 13. **Chronic diarrhœa, Dysentery.** Mrs. W., an American lady, complained of dysentery and *chronic diarrhœa,* which had been going on for four years. The remedies she had tried at the advice of numerous physicians proved quite ineffectual.

I prescribed an easily digestible diet, suited to her condition, cooling friction baths, thrice a day, and three steam-baths each week. Her trouble had quite disappeared after three weeks' treatment.

No. 14. **Liver disease, Inflammation of the colon, Perspiring feet, Gastric catarrh.** For a long time Mr. M. of D. had been suffering from *inflammation of te colon,* which had become chronic, bringing on a severe *liver-disease.* For years the patient had been under allopathic treatment, without any of the remedies tried being of any assistance. At the beginning of September Mr. M. commenced my treatment. The result was beyond all expectation. The *gastric catarrh* from which he was suffering at the same time, disappeared in a few days; the digestion became normal during the first week. The morbid matter, which for years had been stored up in his body was rapidly expelled, and his condition improved from week to week. In two months, during which time he had lost 15 lbs. in

weight, Mr. M. was completely cured and the disagreably smelling *perspiring feet* were also again restored to the normal condition.

No. 15. **Consumption of the spinal cord.** Mr. M., a compositor, of N. was *suffering from consumption of the spinal cord, which the physicians of the Leipsic University Clinic pronounced to be incurable.* M. had been treated for over a year in the above hospital without the slightest result. The poor man was in the most pitiable state, wholly without means, he had to be supported by relatives. The opinion of the doctors, moreover, had robbed him of all hope of an improvement in his sat condition. Fortunately he happened to hear of the cures made by my method, and he made up his mind to try the New Science of Healing. He managed to hobble to me with two sticks, in the weakest condition, despite the nourishing diet which had been ordered, and, as far as possible, given to him. An examination showed that he was suffering from a back encumbrance, accompanied by high internal fever.

I ordered at first hip-baths at 68°—72° Fahr., alternately with friction sitz-baths, the latter each of one hour's duration. The diet was to be a non-flesh one, for breakfast and tea, wholemeal bread and fruit, for dinner vegetables. Every three or four weeks, a steam-bath was necessary, applied to the abdomen, so that the patient did not have to lie upon his back during the bath.

In three months Mr. M. could again walk tolerably well, and in six months even without a stick. The encumbrance of the back was so far gone, that he could again undertake light work, and I was able to let him leave my establishment.

No. 16. **Severe menstrual disorder, Uterine hæmorrhage.** Mrs. W. of Leipsic had been suffering for eight years from *irregular menstruation,* the *period* sometimes *remaining away altogether.* At other times there were abnormal *losses of blood* which completely robbed her of all her sterngth. She hat first consulted a Leipsic physician, Dr. S., who had treated her for a long time, but without any success whatever. The disagreeable local treatment in the Leipsic Clinic for Women proved equally unsuccessful. I directed her to take friction sitz-baths daily and to follow the usual unstimulating diet. The result was astonishing. In a short time Mrs. W. was not only wholly free from the hæmorrhage, but by continuing this simple and inexpensive cure for some months, her menstruation became perfectly regular again. Her physical strength, which had quite collapsed, was likewise regained.

No. 17. **Erysipelas of the face.** A woman who was suffering from severe *facial erysipelas* once consulted me. In addition to my other instructions, friction baths had to be taken, exactly adapted to the condition of the patient. When the fever and inflammation of the face became too great, the friction bath had to be prolonged for two hours, the water being renewed every half hour, in order to reduce the fever heat. At the same time one or two steam baths for the head, followed by friction sitz-baths, were taken daily, and always afforded the patient great relief. In less than a week the disease was perfectly cured, and the woman felt healthier and fresher than ever before.

No. 18. **Encysted tumour, Ringing in the ears.** Mrs. L. of G. Z. had a large *encysted tumour* of the size of a walnut under the left ear, and suffered in consequence from *ringing in the left ear.* For three years she had been using every possible remedy against it, but without success. To undergo an operation, as advised by the family doctor, she could not make up her mind, and consequently she came to consult me. Here also, the only curative means used were friction baths, natural diet and an hygienic manner of living. The ringing in the ears ceased after the very first few baths; the encysted tumour was cured in six weeks.

No. 19. **Sycosis, Spinal neuralgia.** Mr. H. had been for years suffering from the first named disease. All the part about the beard had become deep red and was covered with scales and tubercles. The patient had tried all the drugs at the disposal of allopathy and homeopathy and had also applied the old Nature Cure method, but without any success.

By means of my new method of diagnosis, I found that the *sycosis* was the result of an encumbrance of the back. And it was the fact that the patient had for some years been troubled by *pains in the back.* In consequence of the nature of the encumbrance the cure went on very slowly.

Several friction baths daily, suitable diet and two steam-baths weekly were the curative agents made use of in this case too. By this means the patient was cured of this chronic disorder in five months.

No. 20. **Impotence.** Mr. G. of S. was completely *impotent.* All the remedies tried had availed nothing. By means of my treatment which he carried out at home, consisting of alternate friction sitz and hip-baths, and a non-flesh diet, his disorder was perfectly cured within six weeks.

No. 21. **Infantile constipation.** The infant child (6 months) of Rev. Mr. Q. suffered from obstinade *constipation,* which was not removed by any of the numerous medicines tried. The child was fed upon milk, which was boiled three times when possible. The body of the child was laden with foreign matter, in consequence of which it became extremely feverish and suffered from convulsions which rendered it very weak.

Against the convulsions the doctor ordered cold water com presses, which were to be changed every two hours. This was naturally wholly inadequate, and the baby had convulsions as many as twelve times one day. Now the father came himself to the idea to renew the compresses every quarter of an hour. The result was surprising, the convulsions disappeared.

The cause of the constipation, however, had not yet been removed. The father read my text-book of the New Science of Healing and commenced at once to give the infant hip-baths twice a day, though the water was made too warm (88° to 93° Fahr.). The effect was thus slow, and only after 5 weeks was the child's digestion normal again. Meanwhile, however, the food had also been altered; the child was now given unboiled milk and oatmealgruel, which soon brought it forwards. It also became bright and happy, whereas it had formerly been weak and sickly.

No. 22. **Gland-tumour. Easy parturition** Mrs. M. suffered from *gland-tumours* on the neck an had always to wear a neckerchief to cover them. She commenced my treatment and continued it with great perseverance. The hard tumours soon became soft and decreased in size, and the whole condition of the patient now became remarkably good.

How much her health had improved, Mrs. M. could see at her next confinement. She was delivered of her seventh child, and was not little astonished at the *easy birth.* The baby came into the world after only three labour-pains. The child was certainly small, nevertheless well formed; and as it was not parted from the after-birth for two hours, it kept it rosy colour, whereas all the former children had become yellow soon after the birth.

Mrs. M. had eaten no flesh-meat during her pregnancy, and she was most pleasantly surprised to find that she could give her child the breast for three months, which she had never been able to do at al before.

No. 23. **Sciatica.** Some years ago I was sent for by a physician, Dr. B., who was suffering from *sciatica,* which in spite of all medical

treatment only grew worse. Finally it became so bad that he could neither stand nor lie down, and so had to spend day and night supported on the sofa. I prescribed the doctor two daily friction hip-baths, at from 59 ⁰ to 65 ⁰ Fahr. and a steam-bath every other day; and likewise suitable diet. On the fourth day, already, my bath-attendant reported an improvement in Dr. B's. condition, saying the patient could walk a little. In a week the improvement had so far progressed that the cure could be continued without my aid. In four weeks the trouble was cured

No. 24. **Diphtheria, Scarlet-fever.** I was called some time ago to a Mrs. S., whose little boy of nine, was ill with rather severe *scarlet-fever* and *diphtheria.* The first thing was to give a steam-bath, and one of my apparatuses not being at hand, we had to improvise a bath. We placed the boy upon a cane-seated chair and set a pot containing about a gallon of boiling water underneath. The feet also were placed upon a pail half filled with boiling water and having two strips of wood across the top. The whole body was then carefully enveloped in a woollen blanket. After the patient had perspired profusely, he was given a friction hip-bath at 50⁰ Fahr., his abdomen being rubbed so long, until all the heat had disappeared from the head. It was interesting to observe how the *laboured breathing* gradually became quite normal under this treatment. All danger was now over. Before going, however, I mentioned to the mother, that should the fever return again after some hours, the friction hip-baths must be repeated energetically until the heat again disppeared. In about 5 days the boy had quite recovered. This is the way to heal the dreaded diphtheria, for a remedy against which medical science is still seeking!

No. 25. **Deafness, Laryngeal polypus, Hoarseness.** Mr. S. of T. consulted me about his *deafness in the right ear;* and a *polypus in the larynx.* His disease caused him much trouble in speaking. He had visited numerous hospitals and consulted many physicians, but nowhere did he get any help. Upon diagnosing his diesease by means of the Science of Facial Expression, I found that his encumbrance was a front one, so that a favourable result could be looked for. And so it was in fact, just as I had predicted. After following my treatment for ten days, he informed me that the sense of hearing had already returned to the *deaf ear* and his *hoarseness* and chronic roughness in the throad had much diminished. Four weeks more were necessary in order to effect a complete cure. At the conclusion, the patient declared that he had never felt so well before

— not even in his youth — as now, after getting rid of the encumbrance of foreign matter.

No. 26. **Neurasthenia, Chronic pharyngeal catarrh.** Mr. K. of Leipsic had been a victim to *nervous debility*, which finally developed into chronic *neurasthenia* and *pharyngeal catarrh.* The many cures which he had undergone proved useless. The encumbrance of this patient was favourable, and I could therefore assure him of a good chance of recovery. Nor did the New Science of Healing desert me, for the result was astonishing. The patient had to pass through several crises, but finally every trace of neurasthenia and pharyngeal catarrh disappeared, and the patient felt as he said "born again".

No. 27. **Facial neuralgia, Sleeplessness, Dilatation of the stomach.** A Mr. R. B. of R., aged 39, had been suffering for over four years from peculiar, *spasmodic neuralgic pains.* He had consulted a number of physicians without getting any assistance, and an eminent professor advised him to undergo an operation. This idea the patient did not like, and so he came to try my method. The Science of Facial Expression showed an encumbrance of the right side, for which reason the pains and spasms always appeared on the right side of the face. The source of the disorder had, of course, to be sought in the abdomen; and it was a fact that the patient was suffering from *dilatation of the stomach.* My treatment brought the digestion into its normal and regular condition within a week. After three weeks Mr. B. could sleep the whole night through without any pain, which for four weeks had been impossible for him. In two months Mr. B. was completely cured of his painful disease, and his appearance, also, had changed greatly for the better.

No. 28. **Scrofula, Chlorosis, Far-sightedness, Glandular swelling.** Miss H. G., a school-teacher, of G., had for some years been suffering from *chlorosis* and *scrofula,* followed finally by *obstinate glandular swelling* and *tumours,* and also *far-sightedness.* No curative means could be found against the disorders. In consequence of the presbyopia, Miss G. was obliged to wear special spectacles, which, however, soon no longer proved sufficient, so that in addition she had to wear pince-nez.

A friend called her attention to my method, and she carried it out for half a year most conscientiously. She took two friction sitz-baths daily, each of 15 to 20 minutes duration, and lived otherwise hygienically. The result was successful. First the digestion

improved remarkably. Then the glandular swellings disappeared one after the other, and at the same time the disposition to pulmonary affection. After all trace of the glandular swellings had disappeared, the disease of the eyes also became better; and after the lapse of a year, Miss G., no longer required spectacles at all. That which the most renowned oculists could not do, I was able to accomplish by means of my New Science of Healing.

No. 29. **Infantile constipation and sleeplessness. Inflammation of the eyes.** A Mrs. H. of Mannheim came with her little baby daughter, aged two months, to consult me. The child suffered from *constipation* and *sleeplessness,* a proof that it must have come into the world encumbered with foreign matter. And as I ascertained by means of my Science of Facial Expression the mother was suffering from dyspepsia, and had, moreover, for a long time previously been suffering from *inflammation of the eyes.*

As the mother suckled the child herself, the first thing to be done was to rid the mother's body from all morbid matter. This was effected by her taking a hip and friction sitz-bath daily, by observing an unstimulating diet, and by keeping much in the fresh air To promote perspiration of the child, she took it into her own bed. After two days' treatment, the baby's constipation and sleeplessness were cured; and in a week the mother's digestive troubles and inflammation of the eyes had also disappeared.

Here again was a clear proof of how great the influence of the mother upon her child, exercised through the natural nourishment, is. Direct treatment of so small an infant would have been far less satisfactory. It was the mother's encumbrance with foreign matter, that was the cause of the child's illness.

No. 30. **Cyanosis.** From this disease, the little daughter, aged 12, of Mr. E. H. of P., was suffering. I explained to the father that in such an advanced case, especially where there was so great weakness and where so much medicine had been administered, there was but little chance of cure. Such would only be possible if the abdomen and digestion were capable of being influenced. Thus with but little hope the cure was commenced. In a week, however, the patient's condition hat so improved that she had a hearty appetite and good digestion. In four weeks the *cyanosis* was completely cured, thanks to the vitality of the youthful organism.

No. 31. **Periodical vomiting, Pulmonary affection, Chlorosis.** Mr. M. of L. had been suffering for 12 years from *periodical*

vomiting, against which he could find no remedy. Once or twice every week, regulary, these attacks came on. The attack would continue each time from rising in the morning till bed-time. The result of applying my hip and friction sitz-baths observing unstimulating diet and following my other general instructions, was brilliant. Instead of his pale, ashy features, the patient became fresh and healty looking. His digestion, before wholly debilitated, was now fully normal. The attacks of vomiting ceased. Four weeks after the patient visited me again, in order to thank me for the cure, assuring me at the same time that he felt thoroughly rejuvenated.

No. 32. **Severe affection of the heart, Hæmostasis, Sleeplessness, Protrusion of the cardiac artery, Asthma.** Mrs. M. of H., a lady 58 years of age, was suffering from all these complaints. During the last years her *asthmatic disorder* had become seriously worse. Finally pains were experienced in the right breast, continually increasing in severity. The patient also suffered from *palpitation* and *attacks of anxiety*. The tormenting pain and *difficulty in breathing* left the patient no sleep at all. She was unable to walk ten paces, and she found it most difficult to speak. Then, one day, on the right breast not far below the neck, an artery suddenly protruded, as thick as the finger, which pulsated with great violence, much more quickly than the heart. The physicians in attendance, amongst them a very eminent authority, were helpless at this occurrence. At last they decided that this was a *protrusion of the cardiac artery*, and cautioned the patient that this artery, filled to its maximum with blood might burst at any moment, when death might ensue. The five doctors, including also one well-known hygienic physician, had given up the patient, so that she no longer had any hope as she came into my care. I diagnosed her according to my new method and found that the cause of various disorders was an old abdominal complaint. The immediate result of this was the asthma; then the severe *affection of the heart*, and *the hæmostasis (stagnation of blood)*. Three friction baths daily, and natural diet brought about the best results, for in a week all the pain had disappeared. In a fortnight the pulsation of the protruding artery had abated, and in three weeks all trace of the disorders resulting from the chronic abdominal affection had vanished: a new proof for the correctness of my doctrine of the unity of disease.

No. 33. **Diphtheria.** Else B., a girl of 12, was seriously ill with *diphtheria*. The doctor, an allopath, had used all manner of medicines

without any result. The throat was much swollen, especially on the right side and was obstructed internally with a greenish coating, smelling horribly and as thick as the finger. The child was accordingly in the greatest danger of being suffocated. The physician advised immediate removal to the hospital that *tracheotomy* might be performed Fortunately the parents would not hear of this, and so at the last moment my method came to be employed. A prolonged friction sitz-bath was the first thing ordered, during which the fever perceptibly diminished. Simultaneously the great tension in the swollen neck commenced to decrease. The friction sitz-baths were now given as often as the situation demanded, perspiration being promoted after each. The window of the room where the patient was, was kept open day and night. In 12 hours, all danger was over. In four days the *tumour on the neck* and de internal coating had disappeared. Within a week the digestion was again normal: though I insisted upon the child still receiving only dry, wholemeal bread and uncooked acid fruit. On the tenth day, I instructed the parents to let the child go out in the sun. On the fifteenth day the patient could be pronounced healty again.

No. 34. **Cancer of the lip.** An old gentleman, 72 years of age, had been treated for six years by the most famous allopaths and homeopaths for cancer of the lip. The *growths on the lip* continually developed, and there was a troublesome and perpetual flow of saliva. I diagnosed the patient and found that the encumbrance had risen more from the front and sides towards the head. The result of my treatment was soon to be remarked. Already on the first day the disagreeable salivation ceased, and the *new growths, proliferations* and *open wounds* began to diminish. Within 10 days the latter had healed up, and the lip was now but one third its former size. In eleven days the patient had attained a result which the former six years' treatment had not been able to produce. Here again was a case of *curing cancer,* which the medical profession, as is well known, declares to be impossible!

No. 35. **Disease of the throat, Scarlet diphtheria.** Carl B. of Styria, aged 8 1/2, was brought to me by his mother for treatment. The mother gave the following report of her son's health: Till the age of 2 1/2 he had been thoroughly healthy, but since then, in consequence of *vaccination,* had always been ailing. At first as a 3 year old child he had had diphtheria, which had been suppressed by means of medicines. After this illness the boy had never been

strong and had a most noticeably weak voice. White spots were always to be seen on the tonsils. The troat swelled up on the least occasion, just as in *diphtheria.* Moreover, since this illness, the boy's digestion was much worse than formerly. In March 1891, as the result of a fright, the child got an attack of *articular rheumatism* and was lying ill for 3 weeks. After this the boy was so unhealthy that as a last hope of restoring his health it was decided he should go through a *cure at Louis Kuhne's Establishment in Leipsic.* This was commenced on April 15 th 1891.

The effect of my treatment was surprising. On the second day even, the digestion improved. On the third day the *diphtheria* which had been suppressed returned pretty severely. These crises had to be gone through, since so much medicine was lying latent in the body. On the fifth day there was an abnormal evacuation of most foully pestilential, dark looking fæces, and a discharge of similarly bad smelling coffee-coloured urine. After expelling this morbid matter, in 5 weeks the boy was quite cured, and wholly transformed both bodily and intellectually.

No. 36. **Polypi, Indigestion.** Mr. B. of Z., a pharmaceutical chemist, had for 20 years been a sufferer from *poor and irregular digestion.* In his large dispensary he had every possible purgative at hand, but notwithstanding their liberal use, they no longer had any effect. For a short time a drug would have the desired action, but would soon prove wholly ineffective. Through his bad digestion and this continual use of medicines nearly all his teeth were decayed. At the the same time in the *nose* and *air-passages, polypi* appeared and could not be got rid of. They were, indeed, but the natural result of the chronic abdominal complaint. Twenty-six times these polypi had been removed by operation, but they simply grew the more. One sees here how difficult the physicians—engrossed in the false teachings of orthodox medical science—find it to learn from the actual practice in daily life. By applying my method of treatment, Mr. B. obtanied more in a week, than in all the 20 years of drugging. The polypoid growths gradually ceased. In four weeks the patient was cured. Mr. B. had thus experienced on his own body the correctness of my method of treatment; and was so astonished at the result, that on taking his departure he declared that he could no longer conscientiously continue to keep a chemist's shop. He could see that by so doing he would only be deceiving and poisoning people; and therefore he had made up his mind to sell his business as soon as possible.

No. 37. **St. Vitus' dance and Sleeplessness:** The little daughter, aged 5, of Mrs. G. of L. was afflicted with these troubles. *Her whole body in convulsions,* she was able neither to walk, nor speak, *unable to sleep,* unable to hold anything, unable to digest her food. After having tried all manner of cures, the patient came under my treatment.

Hip and friction sitz-baths, the latter much prolonged, exercise in the fresh air, suitable diet—these soon had the desired result, so that within a week the child was able to walk again.

On the treatment being continued, a complete cure was soon effected, the digestion, which had been altogether debilitated, now becoming quite normal. All this was brought about simply by following my uniform system of curing diseases, without drugs or any other medical application.

No. 38. **Nervous spasms (fits).** A Mrs. G. wss suffering from peculiar spasms. These commenced in the finger tips and passed to the head, causing the patient the greatest trouble. The most eminent physicians of the place had treated the patient, but without any success; on the contrary she became much worse. The doctors erroneously regarded the symptoms as the real disorder, andoverlooked entirely the real seat of the trouble—the abdomen. No wonder then that the complaint only became worse. The result was that at length Mrs. G. came to consult me. I prescribed friction sitz-baths, and the observance of a natural manner of living. In seven weeks the lady had fully recovered from the disorder from which she had suffered for years.

No. 39. **Pollutions, Consumption of the spinal marrow, Sleeplessness, Neurosis, Paralysis.** A Mr. H., 42 years of age, suffering from these diseases, came to me for treatment. Walking caused him the greatest trouble, and to rise after sitting was also a matter of great diffigulty. For years he had been suffering from a bad digestion, *sleeplessness* and want of bodily warmth. He was also troubled with *pollutions,* although married, a certain sign that he had a severe back encumbrance and *nervous disorder.* Medical science had deserted him—for he had tried every remedy it had to offer! I ordered the patient to take two friction hip-baths daily for the first fortnight; then, during the next four weeks to take daily ohne friction hip-bath and two friction sitz-baths. The success was astonishing. The digestion improved after only a few baths; the paralysed legs in some weeks. The *consumption of the spinal marrow* was completely cured in two months. Again,

a proof of the corretness of my new method of treating diseases, and of the incompetence of medical science.

No. 40. **Deaf-dumbness, Congestion of the brain.** The little 4 year old daughter of Mrs. S. of L. was *deaf and dumb,* the result of *vaccination* as the mother said. The numerous medical applications hat proved of no avail. The poor child had been severely maltreated by means of operations and corrosives, and cried now whenever it saw a physician. On account of its crying and fear, I could not thoroughly diagnose the child, but saw nevertheless that it was heavily encumbered with foreign matter and that the *brain was congested.* I ordered simply friction baths and a dry, unstimulating, natural diet, sleeping with open window and plenty exercise in the fresh, sunny air. The result was most favourable and in two weeks the mother informed me, that her child was already much better and could hear a little. In another four weeks the little patient was thoroughly cured: could hear and speak, and was no longer so shy.

No. 41. **Severe constipation.** The wife of Dr. F. of A. had suffered for some 20 years from *severe constipation,* which no remedy could cure. As she came to consult me, she, openly confessed that after all her experience, she really had no hope being cured. After following my advice for a week, especially as regarded a strictly natural diet, the disorder was removed, a number of secondary complaints disappearing at the same time. As regards the diet, the patient had to live for some time on wholemeal and acid fruit, until she was again in a position to digest cooked food.

Letters of Thanks.

No. 42. Sore throat, Disease of the bladder and kidneys. Sexual diseases.

Dear Mr. Kuhne,

The treatment which you *advised me in your letter* has proved most successful. The disorders of bladder an kidneys have become better; also the sexual dieseease, there being but little discharge now. The pricking pain in the throat (I noticed a yellow abscess also, in the throat) has disappeared. I feel much fresher than before. Than

king you for the *advice contained in your letters*, which has proved of such good service,

I remain,

Bromberg. Yours very faithfully,
E. M.

No. 43. Inflammation of the knee-joint, Extreme nervosity, Congestion of the brain, Fatty degeneration of the heart, Disease of the liver, Kidney disorder, Intestinal disease.

Dear Sir,

A short time ago, on account of *inflammation of the right knee joint* (circumference of the knee 22 inches) I visited your establishment and after 18 days' treatment I am again home. The strict diet, with friction hip-baths air and light-baths have sufficed to reduce the encumbrance of my knee to only 17 inches. I owe this restoration to health to your well-known book, "The New Science of Healing," which I bought some years ago. For some time afterwards I kept to the diet you had advised and the friction sitz-baths, and on your system got rid of the following further "trivialities": *extreme nervousness, congestion of the brain, fatty degeneration of the heart, diseases of the liver and kidneys*—though the latter disease had been declared incurable by the medical men. *Intestinal troubles* also made their appearance, but have vanished.

This unsolicited testimonial you may use for any official or legal purpose you may wish.

With sincerest thanks,

Yours faithfully,

Trautenau, Bohemia. Carl H.

No. 44. Severe Migraine.

Dear Mr. Kuhne,

For a long time I have intended to send you my heartfelt thanks, but up till now there has always been something to prevent me. Perhaps you will remember me. Last August I came, with my daughter, introduced by Mrs. N. of L., to seek your aid on account of my *obstinate and severe migraine*. On the second day of my being there, I had dreadful migraine; you were witness of it, as you were kind enough to devote an hour of your valuable time to us when we were sitting in your garden. Since then I have never been troubled with migraine again, for which after thanking God, I have also to return my thanks to you. I feel as bright and free as in my

youth, and therefore find no difficulty in keeping to the diet you prescribed. The baths prove very beneficial, so that one cannot afford to miss a single one. Only the steam-bath gives some trouble to prepare, as I do not possess your apparatus. I would therefore beg you to kindly forward me a *steam bathing apparatus together with the necessary three pots.*

My daughter sends your her best compliments. With repeated thanks and kindest regards,

I remain,

Bielefeld. Yours truly,

(Mrs.) E. H.

No. 45. Rheumatism, Gout, Paralysis, Sciatica, Disease of the eye.

I, the undersigned, was taken ill with the above diseases in the autumn of 1892 and after 3 1/2 years, not one of the various systems of cure tried had been able to restore me to health. *I had been treated without success by more than 12 celebrated professors and physicians of this city.* At last I was recommended by one professor and by a doctor attached to the University Hospital to consult Mr. L. Kuhne. I had thus, up till now, been treated for 3 1/2 years by the most eminent medical authorities in Leipsic, but my condition had only been growing more and more wretched and miserable. In a space of only three weeks Mr. Louis Kuhne, by means of his new method of cure has made me perfectly well and able to work again.

Anger, Leipsic. H. K.

No. 46. Tuberculosis of the lung, Defect of the heart, Caries, Inflammation of the bowels, Hæmorrhoidal affection, Hæmaturia.

Dear Mr. Kuhne,

It was 2 years ago last August that my son, Rev.—, ordered your book "The New Science of Healing." I was, at the end of July, lying at death's door, quite given up by the allopaths. My son called my attention to your method and I clutched at it, just as a drowning man does at a whisp of straw. Your baths and diet hat a wonderful effect. In 5 months both *hæmorrhoids* and *affection of the lung,* complicated by *discharge of blood with the urine (hæmaturia)* and *inflammation of thr bowels (enteritis),* were perfectly cured. That which the doctors could not cure in twelve years, that which

under their treatment only became worse, you cured in 5 months by your natural system of treatment.

Mr. F., who had your book sent, on my recommendation, has been quite cured of a *defect of the heart.* I have made much propaganda for your system here, and have cured several other persons.

For instance, a girl of 16 had been suffering for 6 years from *caries* and could get no assistance anywhere. Pieces of bone had already been expelled from the back, legs and arms. The patient took 2 whole steam-baths and 3 daily friction sitz-baths, and likewise followed a strict diet, precisely according to your prescription. To my great joy what was practically a living corpse has became a pretty and healthy girl.

I send you these lines only to express to you, Mr. Kuhne, my heart-felt thanks.

Gross-Hilligsfeld. Yours faithfully,

—. —.

(Wife of —. U., M.D.)

Nr. 47. Paralysis, Constipation, Gland disease, Scrofula.

Dear Sir,

Feeling it to be my duty, I have the honour of herewith expressing to you my sincerest thanks for your sympathetic assistance and excellent advice in my recent illness. Since 1892 I was suffering from *gland disease (scrofula),* and for several years from *indigestion.* I tried all manner of remedies and consulted the most eminent specialists, but the disorder only became worse, so that I had but little confidence left in physicians. In this helpless condition I happened to hear of your method of cure, and started at once for Leipsic. My left heel-bone having been seriously operated upon, I could only walk by means of a crutch and stick. Your treatment was most successful: in a few days I could walk quite well without the crutch an only required slight aid from the stick, which in three days more was also quite unnecessary. I have felt very well during the cure. Had I come to you in Leipsic in the first instance, I should doubtless have been spared these disfiguring scars on the neck, which now have, unfortunately to put up with.

I shall ever be grateful to you, Mr. Kuhne, and shall strive to spread the principles of the New Science of Healing wherever I go.

Yours very truly,

Burgwindheim. B.

No. 48. **Syphilis, Sleeplessness, Affection of the head.**

Dear Mr. Kuhne,

I consider it to be my duty, to inform you of the great benefit which I have obtained from the use of your method in my serious complaint *(syphilis)*, which specialists described as incurable.

I have for 7 or 8 years undergone various treatments with mercury and 2 or 3 times gone through expensive sulphur bath cures. These *appeared* to do me good, but in reality only suppressed the diesease, without bringing it out of the body. Every year, after each cure I became weaker, more nervous and less inclined for work. Finally I suffered from *headaches*, which nearly drove me mad. I had for months had no sleep; my physician advised me to take sulphur baths again, otherwise softening of the brain might set in.

I felt that it could not go on any longer in this way, and knew that I was being chronically poisoned by these allopathic cures. In desperation—I had little hope left—I determined to try your method. The results were remarkable. After only three baths, I got rest and sleep again.

How much would be avoided, if all patients would only adopt this easy and altogether painless treatment. I cannot praise it too highly, and with pleasure I testify, for the benefit of other sufferers, to the great error of the orthodox doctors, who say syphilis is incurable.

With my old, deep-rooted disorder, my cure was a true miracle. I have continued the treatment for same time longer, in order to thoroughly cleanse the system, and have become, so to say, younger looking. I have got a healthy complexion and new spirits.

For all this I have only to thank you, Mr. Kuhne, and I shall always feel grateful to you.

With greatest respect, I am,

Leipsic. Yours faithfully,

F. E.

No. 49. **Vesical calculus, Inflammation of the Kidneys, Hæmorrhoids, Dropsy.**

Dear Sir,

Some years ago I took ill, suffering first from disease of the kidneys, constipation, and sleeplessness. I had to endure the greatest pain.

Three years later wholly incapable and seriously ill, I had to be conveyed to the city hospital. The diagnosis showed *inflammation*

of the kidneys, vesical calculus hæmorrhoids, and disposition to *dropsy.* I was treated with various medicines, but without any success. From the hour when I commenced your cure my condition improved. Anyone seeing me to day, could never believe in what a miserable condition I was in formerly. I would have soon been in my grave. It is to your system, as I gratefully acknowledge, that I owe my present good health.

Yours faithfully,
G. H.

Leipsic.

No. 50. **Toothache, Contusions, Climatic Fever.**

Dear Mr. Kuhne,

I have had opportunity of trying your system of cure both upon myself and others, according to your *written advice.* In cases of climatic fever and severe toothache, I soon found help through your local steam-baths and cooling hip-baths. Also in the case of a serious contusion of the right hand, the baths took all the pain away immediately. Amongst the Hottentots, also, I have effected numerous cures. It has several times been proposed to the directors of the mission, to let all missionaries study at your institute before going abroad.

I hope to be able to tell you more of my successful cures subsequently, and meanwhile remain, with best thanks and kind regards,

Your true disciple
C. W., Missionary.

Warmbad,
Cape Colony, Africa.

No. 51. **Carbuncle, Sleeplessness.**

Mr. S. of Halle-on-the-Saale reports as follows: Early in April a hard tumour appeared on the nape of the neck, and I experienced great lassitude. At first, I took little notice of it, but the tumour increased in size. My general health was by no means satisfactory; my appetite was poor, my sleep disturbed owing to a strong drawing pain in the small of the back. Gradually the tumour became as large as an egg and the pain grew so intense, that sleep and hunger deserted me altogether. In their stead a violent fever set in, and I decided now to take up a vigorous course of treatment. I took partial steam-baths, for which *Kuhne's folding steam-bathing apparatus* was a great help. The steam-baths were repeated whenever the pains became unbearable, and relief was always obtained through them, the friction and sitz-baths. Between the baths I protected the

diseased part with a clean moist linen cloth covered by a woollen bandage, in order to prevent rubbing and soiling. The *carbuncle*, which had assumed a violet colour, at first remained very hard. The pains constantly returned. In 4 or 5 days little holes of the size of a pin appeared in various places. Their number increased to 20. They discharged blood and bloody water. The tumour was still very gangrenous and hard. In 4 days more the numerous little holes united forming larger ones, from which matter flowed freely. All at once the whole surface collapsed, and the entire carbuncle formed one hole, from which flowed blood and pus. This brought relief; the pains disappeared and in a short time a cure was effected. I now feel better than ever before; I have a feeling as if a great burden had been taken from my body, and my strength is such as was before unknown to me.

No. 52. **Weakness of memory, Obesity, Pulmonary affection, Severe nervous debility, Deafness, Disease of the throat, Violent fever.**

Dear Mr. Kuhne,

One must be a scholar, I suppose, in order not to be able to understand that 2 and 2 make 4, for as simple as this arithmetical exercise, so simple and clear, according to my own practical experience, appears your new and infallible method of healing.

Formerly, in spite of daily gymnastics, I could not support the slightest fatigue whereas now, freed, moreover from my obesity, I can work for hours in the garden and the like without feeling tired. Formerly I gasped with open mouth during my walks (having *weak lungs*), now I breathe quietly with the mouth closed. I have been deaf for years in the left ear, but now I can, at all events, again hear the ticking of my watch, if held, near the ear, the rumbling of carriage wheels, and, to my unspeakable joy, even conversation, if a little loud.

The fermenting matter accumulated in my body must have risen to the head, for I often experienced pain there, and was troubled also by an *affection of the throat*, which neither doctors nor specialists were able to cure. And now, for some months past I have not felt the least feeling of discomfort in the throat. To tell the truth, that charming spectre: *Softening of the brain (imbecility)* had smiled upon me. Since your the horrible symptoms have ceased—*Extreme weakness of memory, unbelievable nervousness*, true *paroxysms of rage* on the slightest occasion, increasing *want of interest* in everthing that should have inspired and animated me,

or which was dear and near to me. Nothing in the world would have induced me (only my husband knew of it) six months ago— to have spoken to anyone about my condition—for speak of the Devil and he is sure to appear. I knew no one could help me; but now it is as though scales had fallen from my eyes: I feel as if born again.

Your miraculous system of cure saved me a few months ago from a vexatious embarassment. I took an apparently healthy servant girl with me to the country; but in a week, with tears in her eyes, she suddenly declared she could not work any longer. Her *feet* were *swollen* up, so that she could draw on neither shoes nor stockings; she suffered from maddening *headache* and took a *violent fever*, so that she could not move. To convey the girl to St. Petersburg was not to be thought of. I accordingly put her to bed well covered and after she had perspired for several hours gave her a hip-bath, exactly according to your instructions. I then explained to her about the friction sitz-bath, after the first of which she felt "so nice and easy!" The whole procedure was again followed on the same day; on the following day twice; and on the third day the girl would not hear of perspiring again, affirming that she was as healthy as a fish in water.

St. Petersburg. (Mrs.) Aug. E.

No. 53. **Headaches.**

Dear Mr. Kuhne,

On my departure from Leipsic I feel called upon to express to you my heartfelt gratitude for the careful treatment received as your hands. I ascribe the cure of my chronic headache (which I had had for years, and which finally became intolerable) solely to the truly wonderful effect of your baths. I shall, therefore, continue to use these to the end of my life. Wishing you a long and untrammelled exercise of your beneficent invention, for the good of suffering humanity,

I remain,
Yours very faithfully,

Leipsic. (Mrs.) M. W.

No. 54. **Pharyngeal catarrh. Eruption of the face.**

Herewith I beg to certify to Mr. Louis Kuhne, that through the employment of his baths for severel months, and a special diet, I have been completely cured of very obstinate *pharyngeal catarrh* and *eruption of the face.*

I shall be happy to furnish details at any time.

Leipsic. Emil P.

No. 55. **Epileptic fits, Swoons, Poverty of the blood.**

Dear Sir,

Permit me to humbly express my gratitude for all that you, thanks to your discovery, have in such a disinterested manner done for my daughter, of whose discovery we had lost all hope.

All that physicians and, dearly bought medicaments failed to accomplish, has been performed by a "natural product"—by water.

Permit me now to briefly describe my daughter's disorder.

When the first signs of the disease appeared, she was about nine years of age; in the beginning we took little notice of it. Slight *fainting fits* occurred, but soon passed of. But as they began to return more frequently, we sought the advice of a gentleman well-known as an able physician. He told us, that the patient was suffering from *poverty of the blood* and *nervous debility*.

He prescribed powders and medicines, which, instead of improving matters made things worse. The fits became more frequent and more violent. We consulted several other physicians, but always received the same medicines.

One doctor at length told us that the disorder was incurable, and we therefore put everything aside except bromide of potassium. We were firmly convinced that this was the sole remedy for this disorder, until you explained to us the state of the case. Now all trouble is over and you will ever be revered and esteemed, as protector and benefactor, by my family and myself. Permit me again to express my sincerest gratitude, and believe me to be

Yours most faithfully,

Gablonz, Bohemia. F. H.

No. 56. **Colds, Tever.**

Dear Mr. Kuhne,

I cannot sufficiently thank you for the services which you have rendered my mother and myself. A *violent cold,* attended by *high fever,* induced me to test the effect of your method of cure on my own person. The extremely favourable result surprised me very much indeed. I am firmly convinced that yours is the method of the future.

Yours very faithfully,

Hamburg. Chr. R. W., Ph.D.

No. 57. **Bony tumour.**

Dear Mr. Kuhne,

I feel called upon to express to you my heartfelt gratitude, for I, too, have experienced the blessing of your science of healing without operations.

Eight times, while under medical treatment, was my leg operated upon. First the toes were amputated; then the whole foot, so that now I have to go about on crutches.

But in spite of all the operations, my leg did not get well. There came a disagreeable feeling of heaviness, and a new *tumour* formed *as large as the first,* and very painful. I feared that I should have to undergo another operation.

My attention having been drawn to your new method of healing, I sought your advice at the beginning of March. After four weeks' use of the friction baths and observance of the other directions you gave, the tumour completely disappeared and I was thus spared a further operation.

Had I submitted myself to your treatment at the commencement of my disease, all operations would certainly have been unnecessary, and I should probably to-day be in possession of all my limbs.

Again thanking you heartily for the assistance afforded me, I remain, Yours faithfully,

Reudnitz. Sophie W—.

No. 58. **Uterine cancer and hæmorrhage.**

Dear Mr. Kuhne,

In December my wife was taken so seriously ill (*hæmorrhage),* that I was obliged to fetch the physician, Dr. K., late as it was (11 o'clock at night). The blood was temporarily stopped by means of cotton-wool, but the next day the hæmorrhage was worse than ever, so that I now fetched a second medical man, Dr. D. He said that the case was one for operation. My wife being no better, I consulted a third physician, Prof. H. He examined the patient, and then stated that an operation must be performed at once, otherwise it would be impossible to save her; it was a *uterine cancer* he said. I asked the professor again, if there was no chance of cure without an operation; he declared that without such, a cure could not be expected.

I then went to you. You ordered hip and friction sitz-baths and special diet. From the time when my wife commenced to follow your advice, she became better. She can now go about her work from 5 in the morning till 10 at night without being tired, and has, indeed, never before been so healthy as now.

Accept our heartiest thanks. We shall never neglect to recommend your method to all sufferers; without it my wife would no longer be living. Believe me,

Yours very faithfully,

Leipsic. Albert W.

No. 59. **Whooping-cough.**

Dear Mr. Kuhne,

Last February I wrote to you for advice as to my child who was suffering from *whooping-cough.* From the *exceedingly valuable instructions* contained in your letter, we noted particularly that we must get the child to perspire profusely by putting it to bed with its mother. What else was necessary we had already done, following the advice given in your book. The course of the illness was as follows: On Sunday we noticed our little one (then 14 weeks old) had a shrill, piping cough. We rightly surmised that our child had caught the illness from the nursemaid, a girl still attending the school, for a great many children in the place were suffering from it. We first sent the girl home. Our baby which received the breast, and was bathed twice daily at 88° Fahr., was given a friction hip-bath (81° Fahr.) at noon, which, however, we had to shorten, to keep the child from crying too long. It proved effective, nevertheless, for it caused the bowels to move. On the third day the shrill tone of the cough changed. It was then that we received *your esteemed letter.* My wife took the child to bed with her and got it to perspire profusely. We then stopped the midday bath and in 12 days the cough was completely got rid off. I can, therefore, only confirm what you say in your book about whooping-cough.

Again let me thank you, both on behalf of my wife and self, for next to God it is you and your method, that have restored our dear child so soon to health again.

With best regards,

Yours very truly,

Harzburg. E. K.

No. 60. **Neurasthenia, Neuralgia, Epilepsy.**

Dear Sir,

To your system of cure alone, I owe my recovery from *neurasthenia, neuralgia* and *epilepsy,* after having been treated by two of the most eminent physicians of Dresden, for a considerable time, and given up by them as "irretrievably lost".

The state of my illness was such, that I was lying ill for three months. As a result, I was exempted from conscription, after having presented myself several times for examination (diagnosis: *Epilepsia gravis).*

Yours faithfully,

Dresden. Hans B.

No. 61. **Difficulty of hearing, Pain in the back, Cough, Suffocative attacks.**

Dear Mr. Kuhne,

As you desired to hear, from time to time, how we go on, I take the liberty of sending you the first report.

Every day we speak of you; every day thank the Almighty that our child, by means of your invaluable discoveries, has been *completely cured of its chronic difficulty of hearing.* It had been suffering from the complaint for a year and a half; now it has been quite well since several weeks. That is the principal success, we have at till now; but at the same time the swollen tonsils are visibly decreasing in size, and the boy seems, as it were, really as though he were altogether transformed. Instead of the tired little mortal, always cryring, we have a merry, spirited boy, mixing with other children. He runs about shouting and singing, whereas formerly his vöice was as though suppressed, he could speak only in an undertone. Nor have the attacks of coughing and suffocative spasms returned so far. Every day we have new proofs of how well the child progresses, both mentally and physically; every day we sing your praises. In the name of my husband and myself, let me here tender you our heartfelt thanks, dear Mr. Kuhne.

As for my own health, I feel sensibly better and more energetic than for years. A particular benefit, I find it, that I am able to cure the torturing, racking pains in the back by such simple means as a sitz-bath. I remain

Yours very faithfully,

— —

(Wife of the Rev. — M. of P.)

No. 62. **Uterine hæmorrhage.**

Dear Sir,

Florika Schellarius, a Roumanian inhabitant of this place, as been suffering from severe hæmorrhage uninterruptedly for four weeks. According to your advice she took two weekly hip-baths, one steam-bath, and two or three *friction sitz-baths* daily, and observed an unstimulating diet. On the sixth day after commencing this treatment, her condition much improved, and to-day (the fifteenth day) she is again quite well. In the name of the poor woman, and of suffering heartfelt thanks. With cincere good wishes,

Yours faithfully,

Z. (Transylvania, Hungary.) Teodore D.

Greek Catholic Priest.

No. 63. Severe Nervosity, Neurasthenia. Weak memory.

For years my wife had been highly nervous. Then, in consequence of overwork in the business, she became so much worse, that it was evident a thorough cure must not be put off any longer. Of the ordinary remedies of the Nature Cure system, none had been left untried. Several brought relief, but none—not even magnetism—brought a real cure. Also the treatment tried in April 1890 at Mr. Louis Kuhne's establishment seemed at first to have no appreciable effect, things seemed to go from bad to worse. After about seven weeks, however, a change took place. One crisis followed upon the other, this critical condition lasting for many months-a time which we shall long remember. The curative power of the body, however, assisted by the Kuhne sitz-baths, after eleven months' diligent, daily use of the baths, brought about the best results. Whereas formerly my wife, to her great distress, had noticed a *failure of her memory*, and *faculty of thinking*, her mental power has now returned again in a quite remarkable degree; she again feels energetic and fresh in a manner she has not for years. Now mental activity is to her a pleasure, formerly it was a strain. And as mentally, so also physically. During the first six months of the treatment my wife was not able to take a walk of more than a couple of miles without resting. In the tenth month, however, she could take a *daily* walk of *over twelve miles*, without feeling the need of rest at all, or even of stopping. All the organs of the body participate equally in this remarkable transformation. In a word: she has become quite another being, formerly often depressed, now ever happy.

After God, our heartfelt thanks are due to Mr. Kuhne for his excellent advice. May it long be granted him to work for the good of his fellow-men, and may he in every patient win an enthusiastic disciple, who will aid in spreading the principles of his simple, yet so true science of healing.

Berlin. C. S.

No. 64. Head affection, Eye disease, Poverty of the blood, Nervosity, Extension of tendons, General debility, Laboured breathing.

An Expression of Thanks.

In my youth I suffered periodically from *headaches*, especially when in school. Later they increased in intensity, and were quite neuralgic.

Then about my fifteenth year, through a fall, I suffered from a severe *extension of the tendons* of the foot. The physicians were unable to cure it, and finally it became so bad, that it was almost impossible for me to walk at all. For five years I had to put up with the greatest pain.

The affection of the head had in the meantime so increased, that in consequence of extreme *nervosity* and poverty of the *blood* I was brought, nearly incurable, to the hospital. A short time afterwards I was discharged without any improvement in my condition.

My eyes had likewise become worse, I was deadened to everything, incapable for any kind of work; my frame of mind was such as gave my friends the greatest concern. I suffered continually from internal gangrene, from dreadfully *laboured breathing* and *continual fever*, and in addition had the prospect of becoming quite blind.

In this more than bad condition, from which no one could free me, I came in September of this year to Mr. *Louis Kuhne's Establishment for the Science of Healing without Medicines.*

Immediately after the *first* bath which was ordered me, I experienced a feeling of general easiness and improvement, which increased as I continued the baths and adopted a suitable diet. In a few weeks my general condition was no longer to be compared with what it had been previously. Now, after about five months' treatment, my sight has so extraordinarly improved and my general condition become so good, that I feel quite happy, and cannot sufficiently thank my high-minded preserver.

I can now again see quite well, can look after my household, feel strengthened and cheerful at work. My foot, also, has so far improved; that I can walk again without difficulty, in short I feel as though a wholly new being, and all this I owe solely to this extraordinarily effective and yet so simple method of cure. The treatment is now adopted in my whole family, and everywhere meets with the same certain success.

May all sufferers with confidence submit themselves to your cure!

Leipsic. (Mrs.) Marie R.

No. 65. **Articular Rheumatism.**

Dear Mr. Kuhne,

Filled with a deep sense of duty, I have the honour of expressing to you my warmest thanks for the kind sympathy which you, have shown me, through your excellent advice during

my illness. Since May, last year, I had suffered continuously from *articular rheumatism* and despite a cure in Teplitz, had a still more severe attack again in the following November. I was without hope of recovery. The physician seemed already to have exhausted his pseudo-remedies, did not put in an appearance for some weeks, and advised me a stay in the south as the only means of cure. In her anxiety my wife then consulted you.

You were kind enough to impart me your *advice by letter.* With the exception of the diet, however, I was unable to strictly follow your prescription, being to weak, and unable to move. At the beginning of February I commenced with the baths, after an improvement appeared to have set in. The effect was soon apparent; for after the third bath, the symptoms of the disease appeared one after the other, in a manner that anyone not prepared for it, by a study of your book, would have been in a state of the greatest anxiety. And, in spite of all confidence, a quiet anxious feeling crept through me too; but all the greater, indeed unspeakable, was my joy, when after the fourth bath I remarked a decrease in the tension of the left ankle. The urine was dark brown. Now I rejoiced notwithstanding all my other pains, as I was firmly convinced I was using a remedy which would go to the root of the disease. The morbid matter now began to disappear from the body, in the same order in which, at the commencement of the illness, it had been deposited in the joints and muscles, once more producing pain and inflammation. In fourteen days I could again take up my professional work. March with its icy rain and wind was not able to touch me, and since then I have been happy and healthy. Meran has certainly one visitor the less, but your system of cure—a method which cannot be overvalued—has won an admirer and propagator.

Sincerely trusting and wishing that your natural system of treating diseases, may find more and more acceptance, leading mankind from hyper-civilisation back to nature, I am, dear Mr. Kuhne, with deep gratitude

Very faithfully yours,
Julius S., Royal certificated teacher.

No. 66. Pain in the stomach, want of appetite, Giddiness, Defect of the heart, Hæmorrhage, Pulmonary affection, General debility.

A Public Expression of Thanks.

The wife of the undersigned—in her 61st year—had been suffering for a number of years, and particularly since 1890, from

fits of giddiness, severe pain in the stomach, want of appetite and *general debility.*

In the Royal University Hospital here, where I brought my wife in autumn 1890, the doctors confirmed *affection of the stomach and kidneys* and prescribed various medicines. But instead of better, my wife's condition became steadily worse.

When in addition to this wholly useless medical treatment, the physicians commenced with inoculations with Koch's lymph, I removed my wife from the hospital, the treatment having lasted till December 1891.

In February 1891 my wife completely broke down; the *attacks of giddiness* increased, causing the greatest anxiety, and the general debility and inactivity of the organs of digestion so got the upper hand, that the patient was confined for six weeks to her bed.

The physician consulted, Dr. H., prescribed a purgative, but stated that the trouble was due to a *defect of the heart,* which was quite incurable; he therefore soon ceased his visits.

In April 1891 the *pain in the stomach* became so much worse, that the patient could scarcely digest anything, but brought all food up again. Simultaneously there was great *difficulty in breathing* and *pain in the chest*, and, in general, a derangement of the whole body.

I now made a trial with homeopathy; but the homeopathic physician likewise declared that my wife's illness was incurable. Any appreciable improvement in her condition was not obtained.

At length, after all this straying about, fortunately for my sick wife, we came to Mr. *Louis Kuhne's Establishment for Healing Diseases without Drugs and without Operations.*

There my wife was ordered to take friction sitz-baths twice daily, according to special instructions, and a diet suitable to her condition prescribed.

In a week, even, a marked improvement in her general health had taken place. Her digestion was more normal and in a few weeks the pains decreased. The *attacks of giddiness* and the *laboured breathing* and other troubles disappeared completely and the patient's strength increased from day to day, notwithstanding the spare diet Thus my wife felt better and healthier than ever before, and all who saw her, were perfectly astonished at such a complete recovery. It struck me also, that my wife's sight by this treatment had become much better than either before or during the illness. All that the eminent physicians could not do in two years, was done in Mr. *Kuhne's Establishment* in a space of less than eight weeks. It is natural that

we shall ever remain thankful to Mr. Kuhne, wishing him God's blessing in his humane work for suffering humanity. Here is at length a physician who can really *cure* and *aid.*

Leipsic.

Gustav P.

No. 67. Incurable disease of the eye, Nervous affection of the head, Chronic pharyngitis, Catarrh of the bladder, Pains in the back and side.

Dear Mr. Kuhne,

My deep feeling of gratitude does not permit me to refrain from sending you an exact description of the course and *rapid healing of my severe disease of the eye,* and I beg you to make free use of it.

Since earliest childhood, I had suffered from a chronic inflammation of the eyes, which had remained from the small-pox. I had consulted various physicians in vain; for although the trouble was temporarily suppressed, it always appeared again after a short interval, worse than before. In vain calomel, mercurial ointment, and zinc lotion, were tried, but without reducing the inflammation. I must have consulted ten medical men during these years, but never met with success.

Meanwhile my eyes were becoming worse, until finally *Egyptian eye disease (trachoma)* set in and my condition was deplorable. Always hoping for cure, I went to a Vienna ophthalmic clinic, where for fully six months I was treated, though wholly without success, with boracic acid, caustic potash, corrosive sublimate and iodoform. Three operations were performed on my right eye, causing me the most dreadful pain.

In spite of all, my condition was becoming worse and worse. When, finally, the doctors saw that they could do nothing, they discharged me, and I would have been condemned to blindness, hat I not applied your system of treatment. To this alone I owe my cure after strictly following your instructions (unstimulating diet and friction baths) for six months.

In the course of the treatment not only did my eye disease improve from week to week, but at the same time I lost my nervous affection of the head, from which I had been suffering for three years. Then, my *chronic pharyngitis* and *atony of the bladder* (which had remained from a *bladder-catarrh* which the doctors had treated with drugs) wholly disappeared, together with very severe pains in the back and sides, which had followed upon *pleurisy* eight years before.

Altogether my general health has become the best possible. Since the application of your system, I feel so mentally fresh as never before.

With the wish that as many sufferers as possible may come to use your method, so that this, which is the only true means of cure, may win the increasing attention of humanity, I remain,

Yours very faithfully,

S. (Transylvania). Eugen K.

No. 68. Inflammation of the lungs, Diphteria.

Dear Mr. Kuhne,

I cannot refrain from openly expressing to you my heartfelt thanks and acknowledgement for your remarkable success in the treatment of my little daughter, nine years of age.

My family physician diagnosed *inflammation of the lungs* and treated the child for nearly two months without success. My wife and I prepared for the worst, for we had no longer hope of the child recovering. It was in this distress that I thought of you.

I wrote you a card begging you to call, and you said: "If you have confidence, and stop the treatment recommended by your physician, the child will recover in a short time, provided you carry out my instructions exactly." My wife and I promised, and followed your advice, and the result was that there was a visible improvement even the very next day. At the end of a week we could say, our child is saved. To-day it is perfectly well, can run about, laugh and play. I am convinced, that had you not intervened, my child would now be resting beneath the sod.

At the same time an old visitor paid me a call: the much dreaded *diphtheria,* against which we had struggled 14 years before. It attacked my other five children one after the other, but under your careful treatment, they have all been cured. I, therefore, express to you again in writing my warmest thanks, and beg you to use the above as often as you may desire.

With sincerest esteem, I remain,

Yours very thankfully,

Leipsic. Karl I.

No. 69. Chronic gastric and intestinal catarrh, Nervosity, Weakness of memory, Thoughts of suicide.

Dear Sir,

I am in the pleasant position of being able to send you a most favourable report. Form the account of my illness, sent to you before I commenced your treatment, you will recollect my condition.

My complaint was a very serious one; my nerves, especially, had suffered severely from bad diet during four years. It is, therefore, easy to see, that I could not be completely cured in a couple of weeks or even months.

I may mention, that my memory has greatly improved, and that I again feel quite cheerful. Of *suicide* I think no more—not in the least, nor do I longer suffer from dull headaches; these have quite disappeared. I have also followed your good advice as to sleeping summer and winter with open window and find it most beneficial.

You see your method has done me excellent service. *I wish from the bottom of my heart, that many such sufferers may visit your establishment.* I can with certainty say, that I should still have required many years to obtain the same result as I have in six months by using your system of cure.

Wishing every success for the future of your institute, I beg to remain with many thanks, Yours very truly,

St. (Moravia) Hugo B., Anstrian Postmaster.

No. 70. **Suppression of the menses.**

Dear Mr. Kuhne,

You will still remember, that last autumn I wrote to you about my wife, who since the beginning of August was troubled with *suppression of the menses.* This made me anxious, as I thought it might be dangerous for my wife; hence my letter of October 10th begging for your advice, when you replied that I need not worry, as all would soon come right. This prediction has proved correct after using your treatment on March 19th 1894, my wife having up till then had no menstrual flow for nearly nine months.

Here again, a magnificient success for your method. Such a result certainly is not often met with, so I will not neglect to express to you my great joy at the astonishing circumstance.

Yours faithfully,

Kiel. H. H.

No. 71. **Whooping cough.**

Dear Sir,

I have employed your method of treatment on the repeated recommendation of acquaintances with surprising success in the case of my three children, who were all taken ill at the same time with that dangerous disorder, the *whooping cough.* I completely cured them

of the trouble in three days, and therefore beg to send you, dear Mr. Kuhne, my sincerest thanks. May your method of treatment prove, as I cannot but doubt it will, equally beneficial in all other cases; and may the great value of this new Nature Cure system be more and more widely recognized.

Yours faithfully,

Leipsic. (Mrs.) Therese B.

No. 72. **General debility, Want of appetite.**

Dear Sir,

It gives me the greatest pleasure to be able to inform you, that so far I have met with the best success in the treatment of my daughter according to your *letter of instructions*. Even after the use of the first few friction hip-baths there was a marked improvement; the *lassitude* disappeared, the appetite returned, *constipation* was cured, aud the *yellow colouration of the skin* has, since using your system, gradually given place to a fine rosy complexion.

With best compliments,

Yours faithfully,

Kleinfalke. F. B.

No. 73. **Rheumatism, Liver disease, Hæmorrhoïds.**

Dear Mr. Kuhne,

Nearly two years have passed since my restoration to health by means of your system of treatment. There has been nothing whatever the matter with me since then, so that I really seem like a walking miracle, both to myself and to all who knew me as I was in those days and as I am to-day. You know in what a critical condition I first came to you. I had never been really well all my life; *rheumatism, colds* and *other disorders* of all kinds followed one another in constant succession. Then, on account of hæmorrhoids and a *severe liver complaint,* I for ten years was in the hands of numerous physicians, both homeopaths and allopaths, the last I consulted being a celebrated professor at Bonn University. During this time I grew so ill, that I could scarcely follow my vocation, and had, so to speak, settled accounts with life. The wonderful success of your treatment in my case has induced many other sufferers to seek aid from you, and they have not been disappointed. I have already informed you of the gratitude which I myself and my family will always feel towards you; the purpose of the present letter is simply to beg you, in the interest of the good cause and of the host of other sufferers, to give the widest publicity possible to the report of my cure. I could say

much more of the successes, which I have had an opportunity of observing both in my own and other families through the use of your baths and a natural mode of life; but this would lead me too far. I am now 51 years of age, have been for 16 years the superintendent of the Evangelical Mission in this town of 115000 inhabitants. Particulars are therefore attainable at any time. With kindest regards, I remain,

Ever gratefully yours,

Barmen. Ernst F.

No. 74. Affection of the stomach, Nervous disease, Constipation.

. . . . I feel that I owe you a deep gratitude, you having, by means of your new method of cure without drugs and without operations, brought me relief in less than a fortnight, in my serious case of gastric and nervous disorder from which I had been suffering for some six years.

In five days you performed what celebrated physicians and all imaginable medicines could not do for me, namely, regulation of the stool. Formerly I had always to employ enemas.

V., West Prussia. Z.
School Teacher.

No. 75. Disease of the nerves.

Dear Mr. Kuhne,

I feel the inward need of giving expression to my feelings. Your method of cure is of incalculable value as contrasted with all those where drugs are employed, and which, as numerous cases attest, bring misery and destruction to suffering humanity, even at the hands of "scientific" men. Almost everyone has experienced this in his family, or in his own person. It would be wilful blindness, in view of this fact, still to daily endanger one's life, or the lives of those dear to one, for the sake of prejudice or habit, by knowingly avoiding Nature. I cannot close this letter without again repeating to you what I have so often said: that I consider the method discovered by you for healing the diseased body to be the product of real genius; and this, my opinion is not founded merely upon a favourable prepossession, but upon the experience of years, and the brilliant success, which you have attained in my family. We can without hesitation say you have saved my sister's life. The wonderful effect of your treatment on my children also, whom you cured of

various disorders within the shortest space of time, make me regard your acquaintance as one of the most valuable acquisitions of my entire stay in Leipsic. Rest assured of my grateful remembrance, wherever I may be, and of my zealous support of your doctrines. With kind regards

Yours very truly,

Vienna. (Mrs.) Olga L.

No. 76. **Articular rheumatism.**

Dear Sir,

I am happy to testify, that by the repeated use of your steam and friction hip baths, I was speedily cured of my severe articular rheumatism; after only the second bath, I could again walk without assistance. I can thoroughly recommend your baths to all suffering from like disorders.

Yours faithfully,

Leipsic. G. E.

No. 77. **Lame Arm.**

My youngest son, by my first marriage, August von B., at that time $12^1/_2$ years old, complained early in December 1886, of violent pain and heaviness in the right arm. It soon became so much worse that he was unable to use the hand and arm, and had to carry the latter in a sling. Various remedies tried proved ineffective. By chance I heard of Mr. Kuhne's treatment, and that he had already cured similar cases successfully, so decided to place my child in his hands.

I strictly followed Mr. Kuhne's instructions.

Although a considerable time elapsed, and our patience thus put to the proof, a turn for the better at length appeared in the boy's obstinate disorder. Not only was the *lame arm* quite cured by the friction hip and sitz-baths and the unstimulating diet (this, too, according to instructions), but both the utterly prostrate digestion and the appetite were restored.

Dresden. (signed) Edle K.

(Wife of Lieutenant Colonel K.)

No. 78. **Serious abdominal disorder, Leucorrhœa.**

Dear Sir,

On my departure from here, I feel the desire to express to you, benefactor of mankind, my sincere thanks for the cure your

treatment has brought me. I consulted the best physicians for years and received more injury than benefit. They all insisted upon an operation, but I have now, by your aid, recovered from my disorder without anything of the kind. I shall tell everywhere of the brilliant successes you attain in *all* diseases, and how it is possible to regain health without doctors and without operations.

With the renewed expression of my deep gratitude for your kind attention, I remain,

Yours very faithfully,

Leipsic (Mrs.) E. L.

No. 79. **Digestive disorder.**

Dear Sir,

I wish to thank you, in my wife's name, for your prescription of the baths. My wife's health had been wholly disordered for four years; during all the time she found relief neither from allopaths nor homeopaths, and death stared her in the face. In our despair we consulted you. Now, after employing your treatment for $5^1/_2$ months, my wife is completely restored to health and vigour. Before coming to you she weighed 104 lbs., she now weighs 126 lbs.

With our best thanks and good wishes,

Sincerely yours,

Kirchhain, Lower Lusatia. T. W.

No. 80. **Easy pregnancy and birth.**

Dear Sir,

Allow me, though unsolicited, to inform you, that the *treatment you prescribed in your letter* has proved of good service. My wife has had till now four confinements. The first was a very difficult one; in the second, the forceps were required; before the third and fourth we employed your treatment. This proved most satisfactory, both *deliveries* being *very easy*. Both in my own name and in that of my wife, I beg to offer you sincere thanks. Such a result deserves thanks indeed, for a difficult birth is a bad matter.

With best wishes

Faithfully yours,

Georg S.

Munich.

No. 81. **Podagra and Gout.**

Dear Sir,

Herewith I take the liberty of sending you my heartiest thanks for your treatment. My disease had been chronic so

long, reaching back into my school-days, that I scarcely hoped for recovery. Even as a boy of 12, I had pains in the great toe, which developed into *podagra* and *gout*. In the course of years my condition continually grew worse and more intolerable, especially as all the numerous doctors consulted, were unable to help me. My hands and feet were so tumefied and indurated at the joints, that finally I could use neither. For over $1^1/_2$ years I led a hopeless life, wholly unable to move; my misery being all the harder to bear from the fact, that no physician could being relief. I was unable to do the smallest thing myself, and had even to be fed by another person. I was as helpless as a new-born baby, and therefore all the more difficult to wait on.

Immediately on coming under your treatment, 6 months ago my gouty system began improving. My feet and legs, in particular, in two or three weeks became so easy, that I was at last able, to move my limbs and walk about. My hands and fingers, which were dreadfully bent and swollen, have also become daily more supple and normal.

Only those who have known my wretched condition in the past, can conceive the gratitude which I feel in writing you these lines.

Yours faithfully,

Leipsic Emil W.

No. 82. **Chronic disease of the throat.**

Herewith I beg to certify that Mr. Kuhne, hygienic practitioner, Leipsic, has cured me of a chronic disease of the throat, which refused to yield to the treatment of an eminent specialist. For two years I have employed the baths prescribed by him and feel so greatly invigorated by them, that I can give 30 singing lessons weekly without over-exertion.

Leipsic. Clara C.

Teacher of Singing.

No. 83. **Headache, Fainting-fits, Throat disease.**

Dear Mr. Kuhne,

In consideration of your admirable curative method, by which I have been freed from *headache*, *fainting-fits* and *throat disease*, I feel it my duty to send you herewith my warmest thanks for

the successful result. With the wish that you may long be spared to labour, with God's blessing for suffering humanity,

I remain,

Yours truly,

Leipsic. Caroline K.

No. 85. Epilepsy.

The undersigned certifies with pleasure that Mr. Louis Kuhne, proprietor of the Hydropathic Establishement, Flossplatz, Leipsic, has perfectly cured of *obstinate epilepsy* a boy named Golle, a former pupil of the undersigned.

The epileptic fits occurred several times a day at last, and as regards outward symptoms, appeared really like frenzy. Since the cure, no other fit has occurred, and the boy has gained a fine healthy complexion.

The undersigned feels that he should specially mention, even if contrary to Mr. Kuhne's wishes, that for the complete cure, lasting over 4 months, Mr. Kuhne not only took no fees, but even financially supported the boy's widowed mother, Mrs. Ida Golle, so that she could be better attend to her son. This fact has until now, besides to Mrs. Golle, only been known to the undersigned.

He who accepts a patient in such a self-sacrificing manner, is certainly the man who will prove a true adviser for the sick under all circumstances.

Leipsic. E. H.

No. 85. Curvature of the spine, Nervous disorder.

My dear Mr. Kuhne,

It is with sincere satisfaction that I beg to state how pleased I am with the result of the treatment so far, both in regard to its effect on my son's condition *(curvature of the spine)* and my own *(disease of the nerves).*

After an experience of six months, we are contniuing the treatment with fullest confidence. I would have no hesitation whatever in expressing myself thus, whenever asked.

I leave it quite to you to make what us you may desire of this statement.

With best wishes,

Yours very faithfully,

Weimar. B.,

Admiral.

No. 86. **Influenza, Aberration of the mind, Agitation, Sleeplessness.**

Dear Mr. Kuhne,

Filled with thanks for the invaluable service which you rendered my husband in his severe illness, I must not neglect to acknowledge the blessful effect of your excellent method.

About the middle of December 1893 my husband fell so ill with *influenza*, that we feared the worst. The brain was affected to such an extent that his understanding was quite clouded.

To our deepest concern, we observed for a whole fortnight, a daily increasing *aberration of the mind* and perpetual *agitation* which rendered constant watching of the patient, day and night, necessary and caused us the greatest anxiety.

The physician in whose treatment my husband was, declared that there was nothing to be done and ordered quiet. It was then, urged by my friends who where convinced of the marvellous effect of your method of cure, that I decided to give way and to call in your advice, dear Mr. Kuhne.

As you were kind enough to give the first five baths personally, you had occasion yourself to observe that after the very first bath there was remarkable quietude; that after the second, sleep came, which in spite of every kind of soporific had been impossible for a fortnight; and that after every subsequent bath signs of returning understanding were to be remarked. The mind became hourly clearer, and after 4 days there seemed to be a wonderful awakening to full consciousness, as from a dream.

Till this day, thanks to God, nothing serious has occurred again.

Although formerly full of doubt, I must now confess, that your treatment really worked miracles. The ceaseless anxiety and care from which you have freed me and mine, compels me to tender you my sincerest thanks. And my husband, regards you, dear Mr. Kuhne, as having saved his life. Like me, he is filled with gratitude and esteem for you and your valuable system.

I remain, with sincerest regards from my husband,

Very faithfully yours,

Dresden. Clothilde W.

No. 87. **Severe headache.**

Dear Mr. Kuhne,

I cannot refrain from expressing to you my sincerest thanks for the cure of my severe *headache*, which lasted for a fortnight

and caused me much care and anxiety on account of my dear ones. From youth I frequently had headaches; for many years, at least once a month, I suffered severely for 24 hours, during the last eighteen months I have been troubled with them every week; and three weeks ago my head was so bad for 10 to 14 days, that I really feared my whole brain was in a state of severe inflammation, which had affected the whole of the left side of the head and also my eyes. For the latter were likewise painful and deeply sunken.

Yet the first bath in five minutes has cured me of my disorder; and I have become so much stronger, that I can now walk again as quickly as ever, and as though rejuvenated, though I am 52 years of age. I have, however, not sat on a board, but in the cold water, and have then followed your instructions, which have now become sor dear to me. In five minutes the buttocks became warm, and this feeling increased during the whole operation, which I continued for about 20 minutes. Afterwards I took a little walk for about a quarter of an hour. I have continued this now for 12 days, always with an equally good result—a comfortable feeling over the whole body and also in the head.

I am therefore extremely indebted to you. But I should like to do more than merely thank you; I should like to help you by making your New Science of Healing known to my neighbours and all over the vicinity. If you publish leaflets, I shall be happy to distribute same, especially amongst all sufferers. My services are at your command.

Yours very truly,

Tübingen. G. A. L.

No. 88. Easy pregnancy and birth.

Dear Mr. Kuhne,

Just returned from a journey, I have heard with pleasure of your jubilee, and hasten to send you my hearty congratulations.

Exactly a year ago I arrived in Leipsic, dead tired and miserable; my only hope after God was in you. After having visited the most famous watering-places of the world, and consulted the greatest physicians, always in vain, I felt so much better after only three weeks of your simple system of cure, that I vowed I would not stop it for the present.

During the winter, in the greatest cold, despite the fact that I was *enceinte* I took two friction sitz-bats daily and lived according to your instructions. To my great happiness I had an *easy,*

safe birth, and during the whole period of pregnancy never once felt unwell. The most remarkable thing, however, is that whereas for the two first children I had to engage wet-nurses, not having any milk myself; my present baby I have the fortune to be able to suckle myself, and give him in addition thick oatmeal gruel. Every evening I give him a hip-bath for 5 minutes, his abdomen being too large; in the morning I give him a bath at 88° Fahr., and douche him over with cold water. I wish you could see him, now three months old, a really strong and healthy child. The very people who at first laughed at me about my cure, now confess openly to me, that I look ten years younger, and that my baby boy and I look like a picture of health. There are fully 12 families here in Züllichau who are following your system with enthusiasm. My sister, who was with me then in Leipsic, and who was likewise pregnant, did not live as I did, but eat plenty flesh-meat etc. She had a very difficult confinement; has had to give the child to a wet-nurse and is now lying seriously ill.

To all who feel the least doubt about your system of cure, I cry from afar; Repose full confidence in Mr. Kuhne, this man graced by God.

I write you these lines on the occasion of your jubilee to prove to you how thankful I am, after to God, to you; and how I shall ever be one of your most enthusiastic disciples.

With kindest good wishes to yourself and family,

I remain,

Yours sincerely,

Züllichau. C. B.

No. 89. **Liver disease, Gallstones, Nervousness, Rheumatic headache, Abdominal disease.**

Dear Sir,

You will certainly remember that I was a patient at your institute in Leipsic from June 24th to July 13th. As you know I was suffering from *liver-disease* and *gallstone.* As I left you, my condition was greatly improved, so that you hoped by continuing my cure I would soon be completely restored to health. After I had been back here a few days, I experienced violent pains again, and *two more gallstones* were passed. During the pains I took some hip-baths, which did me much good. Since then, however, all has gone well, and I can work all day without feeling unduly tired, the people looking upon me as a miracle; I must therefore express to you my fullest acknowledgement. Encouraged by the success of your treat-

ment in my case, a poor widow here, who for years had been suffering from *nervousness, rheumatic headache* and *abdominal disease* determined to try your system. The doctor who had been treating her declared that her illness was only imaginary. She had read your book "The New Science of Healing", and took two or three friction sitz-baths daily. She was pretty corpulent, so it was noticeable how much thinner she became in a fortnight; she said that the abdominal pains had nearly disappeared.

Yours faithfully,

Volmarstein. L. S.

No. 90. Asthma, Hæmorrhoidal affection, Inflammation of the throat.

Dear Mr. Kuhne,

Towards the end of October last I *wrote* to you for advice, and recceived your esteemed reply under date November 3rd. Herewith I beg to communicate to you briefly the course the cure has taken.

My wife has taken the friction sitz-baths regularly for 6 months, three times daily, and sometimes oftener when she had inclination; and also warm friction hip-baths and steam-baths alternately. She lives almost wholely on wholemeal bread and apples, eating only now and again vegetables and other easily digestible foods. She sleeps with open windows, is much in the open air, and feels better than ever before. During the first months of the treatment large blisters formed in the region of the sexual organs, and after discharging their contents filled again. An ulcer has also formed on the abdomen, discharging much repulsively smelling matter. The torturing *asthmatical affection* and the *hæmorrhoids* have now nearly disappeared. My wife no longer finds walking troublesome, and her appearance has, indeed, quite changed. After the friction sitz-baths she always felt extremely cold, natural perspiration was, of course, *seldom* to be produced. Now this chilliness has decreased. She has a healthy appetite and her digestion is much improved, for what she eats is now assimilated by the body. I have great confidence in the cure, and find confirmation of the statement, that it works slowly but surely. All former illnesses return, but appear in a less degree.

I have used the friction sitz-baths and steam-baths with extraordinary success in the case of my little $3^1/_2$ year old child

who was suffering from inflammation of the trhoat, and I can fully confirm the statement that your method is the true one.

With kindest regards and many thanks,

I beg to remain,

Yours faithfully,

Hermsdorf. P. L.

School Teacher.

No. 91. **Rheumatism, Swollen feet.**

Dear Mr. Kuhne,

I cannot refrain from expressing my best thanks to you for the rapid recovery from my dreadful complaint. Your simple sitz-baths have freed me in 3 months of my terrible disorder. I had suffered for a long time from *rheumatism* in hands and feet. The bones of the hands were so prominent, that my hands looked quite crippled. I could hold nothing, and had so much pain to endure, that I scarcely knew what to do. My *feet* were so *swollen up*, that I was hardly able to go up-stairs at all. I wish to express to you my warmest thanks for the rapid and inexpensive recovery from my serious complaint. Everyone suffering from such a disease, I advise to consult you; your treatment is most simple and costs but little. I am,

Yours faithfully,

Leipsic. (Mrs.) T.

No. 92. **Uterine tumour, Leucorrhœa.**

One day Mrs. H. of M,— called upon me and reported as follows: Her niece had undergone a most successful cure in my establishment in the spring and was not satisfied until her aunt had taken up the same treatment in the way in which she had learned. "I have," she continued, "for many years been suffering from an affection of the abdomen, and have been trying remedies for a long time past without success. My physician said that I had a *tumour in the uterus*, which, he said, was growing slowly but steadily. An operation would very soon be necessary. I myself felt so miserable, that I declared to the physician that I could not think of undergoing an operation. If I had to die, I would do this without the operation, for I felt much too weak for such. With very little hope I began your treatment just as my niece showed me. The stool, which for years had been hard and irregular, began to be quite normal from the second day of the treatment,

from this day the evacuation from the bowels was regularly more than previously. I had also to urinate three or four times as frequently as before; in short, I observed how the morbid matter in me was daily being expelled. My abdomen decreased in size from week to week, becoming much more normal in size. Every night I perspired, such as had never been the case before, and from day to day I felt better and stronger. I was most surprised to find during the cure, that every day after the friction bath there was an excretion *(leucorrhœa)*, which I had never had until then. Such excretions took place once or twice nearly every day for four weeks. Then suddenly one day a prolapse occured. The physician called in, stated, however, that this was no prolapse but an *uterine tumour* having the form of a coffee pot and weighing $4^1/_2$ lbs. It had forced its way through the *os uteri* and had grown unto the interior of the uterus with two pedicles. This growth gradually freed itself, and having continued the friction sitz-baths and the diet for some time longer, I now feel better than ever before."

No. 93. Complette lameness through leg being too short, Chronic hip-disease, Melancholia.

Mrs. H., in a letter of thanks, writes as follows about the former condition of her daughter:

"My daughter Elsa, aged $4^1/_4$ years, was attacked by *hip-disease* in October 1889. At first she was treated allopathically, but without permanent success; for early in February 1890, the leg affected became shorter than the other; indeed the child had not been able to walk for a long time. A *plaster bandage* was used for three weeks, and an *extension-bed* for a month, but also without success, whilst the child was subjected to much pain. She was then put into the hands of Professor S. of Leipsic to undergo a several weeks' course of treatment. She had to lie always in bed and be rubbed with different embrocations. The treatment could not, however, be strictly carried out, as the patient was unable to lie quiet for weeks together; this treatment also, then, was without result. At length I took my daughter to the Leipzic Hospital, where she was treated unsuccessfully for thee weeks longer. The hip, which until then had always been soft, grew quite hard and stiff after this treatment. The leg did not grow at all and the child had been unable to walk for 9 months. But worst of all, my child, through the treatment in the hospital had become quite melancholic, so that I lost all hope of her being cured at all. Before the treatment, she could at least stand, but this wat now no

longer possible. In this condition I entrusted my Elsa to your care. I scrupulously followed your instructions, and to my unspeakable joy the melancholia vanished after the first three friction sitz-baths, and my daughter was again able to stand. In three days, to my extreme surprise, she could walk again and was so much improved in a fortnight that she could mount the four flights of stairs from the street up to my flat without assistance. During this time the hardened muscles about the hip again became quite soft, and after four weeks' treatment, one could distinctly see that shortened leg had grown longer. To day, three months later, all traces of the disease have disappeared, and both legs are of the same length and can be used equally well.

Leipsic. (Mrs.) Minna H."

No. 94. **Rheumatism, Constipation, Hæmorrhoids, Typhus, Prolapse of the uterus, Whooping-cough, Scarlet-fever.**

Dear Sir,

I came into possession of the second edition of your text-book, "The New Science of Healing", at the end of the summer of 1891. The correctness of your teaching was clear to me from the first. Since that time, with my wife and the youngest children I have lived in every respect according to your system, and obtained such benefits, that I have for long felt the obligation to write you to express my gratitude.

I was then 52 years of age, and as the result of my former manner of living—at times most irregular and fast—I suffered from *intense nervosity* and also *rheumatism*. I was quite unfit for work and often felt tired of life. I took friction sitz-baths and once a week a steam-bath; lived on an unstimulating diet, and slept with open window, as my wife and I still always do. For over $1^1/_4$ years now, I have been quite healthy and equal to my work, and feel altogether happier and quieter than ever before. By nature inclined to be quick tempered, I feel myself now quite changed. Conjugal happiness and peace have returned to our home.

My wife was suffering severely at the time from a *prolapse of the uterus,* which an allopathic physician had been treating for a year and a half without success. She began, at the same time as I, to take a friction sitz-bath three times daily, and in general followed pretty much my system of living. The result was, that on the very next day she was able to properly evacuate the bowels —she was a victim to *constipation*—and slept much better at night. She was quite restored to vigour; in six weeks her obdominal

complaint was cured, and her *hæmorrhoidal affection* nearly so. Thus relieved of her disorders she was delivered of a son, who brought up according to your principles, has grown to be a healthy, lively child, far in advance of many children of his age. At the same time he eats probably but one third of what other children are *compelled* to swallow.

Of puerperal fever, ulcerated breasts etc., my wife has known nothing.

About two years ago my wife got *typhus*,—possibly in consequence of the over-exertion and much worry about my two edler sons. By carefully following your prescriptions she was cured in about a fortnight.

My sixth boy, then $4^3/_4$ years old, caught *scarlet-fever* and for three days was extremely delirious. Each time the fever was high we gave him a hip-bath for a quarter of an hour; and as a rule before this time had elapsed, his consciousness was fully restored. During the last very bad day, we gave him five of these hip-baths, and the following night two or three. From the next morning the delirium disappeared, and recovery was comparatively rapid. At the *commencement* of the fever, we had given the child some steam-baths in the bed, by means of hot bottles, which brought out profuse perspiration. Sometime afterwards the boy caught *whooping-cough;* we therefore gave him two hip-baths daily each lasting a quarter of an hour. Here, too, the illness passed off well, the patient being quite cured in three or four weeks.

Since then, also, by following your teachings, we have cured many less serious illnesses, so that I have recommended your method of curing on every occasion.

To have had the above cases treated by a medical man, would have cost me innumerable guineas in fees, and the results would have been doubtful. The following of your prescriptions—as given in your book—has cost me no money, but only a little trouble, such as one gladly undergoes for the sake of those dear to one.

Your so simple method of curing diseases and the diet included in the system, renders one not only physically, but also morally healthier.

You can make any use you like of the above, just as you consider well in the interests of your method of cure, which surpasses exery other as yet formulated.

With sincere good wishes

Yours very faithfully.

B. H.

Elberfeld.

No. 95. **Calculous disease.**

Dear Mr. Kuhne,

Herewith I take the liberty of acquainting you with a remarkable change which has taken place in my physical condition. Perhaps it will not be surprising to you, though I have been much astonished, because I was quite ignorant of the fact that this part of my body also was encumbered to such an extent with foreign matter.

For two mornings running I had much difficulty in passing urine, and also further pain, temporarily, behind above the left hip. In the afternoon following, in urinating a small stone (more properly a splinter of stone) was passed, and for several days afterwards a turbid fluid of the colour of the stone, also with another little firm stone splinter, this time, however, without pain.

My surprise was a most happy one, since this case convinced me still more of the curative efect of your treatment. I see here a confirmation of the statement in your volume, regarding the renel calculi being diesolved, and severe illnesses thus avoided.

I feel it to be my duty to communicate to you the above facts, and beg to remain, with sincere thanks,

Yours very truly,

Bredstedt. A.

No. 96. **General debility, Disease of the eye, Abdominal disease.**

Dear Mr. Kuhne,

A troublesome *abdominal* disorder, attended by *nervousness*, from which my wife had suffered for some 14 years, refused to yield to the treatment of the various physicians consulted.

In the course of years her condition grew so much worse, that general debility set in, and she could not even perform the lightest work in the household. The attendant weakness of the eyes also rendered it next to impossible for her to read. On Marsch 17th 1884, my wife began to take the baths and follow your other instructions; and I am now able to state, that the abovementioned disorders have been cured. I warmly recommend this treatment to all patients similarly afflicted,

Faithfully yours,

Leipzic. G. F.

No. 97. **Serious nervous disorder.**

Dear Mr. Kuhne,

I cannot help writing to thank you once more for that which you have done for my life and health. Without your help I should probably never be here now to speak: for as countless witnesses know, I have been consoled by the most eminent physicians and then-left to my suffering. Let it then be clearly proclaimed, tat you alone restored me to life, at a time when I had given up all hope. That your simple and therefore grand discovery may become universally known for the general good, is the sincere wish and hope of

Yours gratefully,

Vienna. Emma P.

No. 98. **Digestive troubles, Sleeplesseneness.**

Dear Mr. Kuhne,

With great pleasure I am now able to inform you, that my health, after using the friction hip and sitz-baths, in conjunction with the steam-baths, for some time, is greatly improved.

The *digestive derangements* from which I suffered have been cured. I feel invigorated, and my spirits are also much more cheerful. I must observe, further, that I now leep very well, which I could not do before.

With sincere thanks,

I remain,

Yours faithfully,

Leipsic. Amalie F.

No. 99. **Chronic constipation, Hæmorrhoidal affection, Gastralgia.**

Dear Mr. Kuhne,

As I informed you by my card two days ago, I am extremely satisfied with the results of your "anti-drug treatment". I am extremely happy to be able to inform you, that the *chronic constipation*, for which I have tried all manner of remedies without success, for the past 40 years, *after I have followed the instructions contained in your letter* has been completely cured. The bowels move now regularly twice every day. Simultaneously, the *hæmorrhoidal affection*, which appeared at the same time as the constipation, early in the fifties, improves daily.

The *gastralgia (enlargement of the liver)* has quite gone away,

and even a pain I had on the right side of the stomach has now disappeared, whereas three months ago, the least pressure on the part caused me dreadful pain. In short, I feel the effects of your new method of curing disease every day, for all the troubles from which I have suffered for nearly 40 years, and which homeopathy, also, was powerless to cure, have steadily decreased. I have lived in accordance with your advice on a perfectly unstimulating diet, and in addition took 3 friction hip-bath every morning.

With kind regards,

Yours faithfully,

Aibling. F. C.
Captain.

No. 100. **Nervousness, Toothache, Headache, Sleeplessness, Hoarseness.**

Dear Mr. Kuhne,

I first heard of your method in 1887, and by means of it cured my severe nervous disease. Since then I have frequently had occasion of proving the beneficent effect of your curative means. During one of the last winters I was tormented by dreadful *toothache*, caused by a hollow tooth-the furthest back one in the upper jaw. The inflammation was so severe, that the whole of the right side of my face up to the temple was swollen, causing a throbbing pain, rendering *sleep impossible*. Friction sitz-baths of short duration, several of which I took daily, only brought slight relief. When, however, following your advice, I took a steam-bath lasting over half an hour, and then followed this by a prolonged friction sitz-bath, my *excited nerves* were at once soothed, and the pain gradually decreased. Within a few hours the trouble was over. Of late I have used a steam-bath for the head with the best results for *headaches, lancinating pains in the eye* etc.

It will also interest you to hear of another success, which has followed the use of your friction sitz-baths. I had, as one says, "caught a chill", and was so hoarse, that even to whisper caused me difficulty. This condition lasted two days, when on the morning of the third, still extremely hoarse, I took a friktion sitz-bath at 8,30 a. m. I found that the bath proved exceedingly beneficial to me in my condition, and prolonged it unitil the water became too warm. After having renewed the water twice and having bathed altogether for $2^1/_2$ hours, I found that my *hoarseness* had almost entirely vanished, so that I could speak and sing at the utmost pitch of my voice. Tais extraordinary satisfactory result, which

would certainly not have been attained by any other method, filled me with the greatest astonishment, and made me all the more sensible of the gratitude I owe to you and your valuable system.

As it may be of value for many persons to know of such cures as these, I authorise you to make any use you may think fit of this letter.

Believe me to be

Yours faithfully,

Leipsic. Karl L.

No. 101. **Easy parturition.**

Dear Mr. Kuhne,

I feel it to be my duty, though unsolicited, to express to you my thanks for the successful treatment you recommended, and which my wife followed before the births of our second and third children. The birth of our first child, I may remark, was a particularly difficuld one and necessitated the assistance of a medical man. Indeed, the physician cautioned us against having other children, as my wife was not of normal structure. *The last two births,* however, thanks to your method, *were over in $2^1/_2$ and 1 hour respectively, and without any midwife!* The last child, too, was heavier than the others.

Yours very truly,

Dalbke. Paul K.

No. 102. **Neuralgia.**

Herewith I beg to tender my heartiest thanks to Mr. Louis Kuhne for the relief which I have attained trough the employment of his natural method of cure. By its means I have been freed from chronic and violent *neuralgia,* my general health being also most favourably influenced. I therefore most warmly recommend Mr. Louis Kuhne's Hydropathic Establishment, 24 Flossplatz, Leipsic, to all sufferers.

Leipsic. (Miss) E. F.
Artist.

No. 103. **Discharge from the ear, Pain in the ear, Climatic fever.**

Dear Sir,

In receipt of your *letter of advice,* I am happy to be able after scarcely three weeks' treatment to be able to report to you my complete recovery from my old chronic complaints: *discharge*

from the ear (otorrhœa), pain in the ear (otalgia) and *tropical fever.* I beg to offer you my sincere and hearty thanks for your assistance. I am extremely well, and am only now undergoing an aftertreatment in the form of a friction hip-bath every morning for five minutes. Again expressing to you my warmest thanks,

I remain,

Very faithfully,

Puerto Cabello, Carlos L. B.
Venezuela, South America.

No. 104. **Chronic gout.**

Dear Mr. Kuhne,

I am able to inform you that I have just cured a man, Paul K., of *chronic gout* from which he had suffered for 25 years. He had been declared *incurable* by five physicians; I cured him in six weeks *by means of on your system of treatment.*

Please have the kindness to send me per post a copy of your book, "The New Science of Healing", elegant cloth, German edition.

I remain,

Yours truly

Heerdt, Kreis Neuss. Franz S.

No. 105. **Hepatic colic, Hysterical crying.**

Dear Mr. Kuhne,

As regards my health, I can give you the best report. I have very often had *hepatic colic*, always lasting some days. A week afterwards I had fits of *hysterical crying*, from which I have always suffered much. *By following your prescriptions* I have now cured myself of all these old troubles. The greatest fun I have is with the physicians, who have treated me so long without success. When I meet one of them, he will always stop me and ask what I have done with my diseases, as I have now quite a slim figure and such a fresh youthful complexion. There were over 30 physicians in Bielefeld whom I consulted during my 20 years' illness. All that we could have saved, has been thrown away in doctors' fees and chemists' bills.

With best compliments,

Yours faithfully,

Bielefeld. M. H.

No. 106. Diphtheria, Constipation, Pain the back, Irregular menstruation, Headache, Pain in the eyes.

Dear Mr. Kuhne,

Last autumn my son had an attak of *diphtheria,* which I have cured by your system alone. The medicine prescribed by the doctor all found its way down the sink. He wanted at the very commencement of the illness to have my son taken to the hospital, as his condition was serious.

I have also used your cure with the greatest success in my own case. I was suffering from severe *constipation, pain in the back, irregular menstruation, headache, pain in the eyes,* which all soon disappeared. Even the first bath had the desired effect on the bowels, just as you describe in your book. I am so thankful, that, chance put your volume in my way.

Yours faithfully.

Celle. (Mrs.) E. H.

No. 107. Epilepsy, Convulsive attacks.

Dear Mr. Kuhne,

I feel it my obligation to express my hearty thanks to you for the quick recovery of my little child, aged 10, from *epilepsy* and *convulsive attacks* of the worst kind. After we had been using medicine for a long time, and the doctor had at last declared that he could not further assist, advising us to consult Professor —, we heard of your invaluable method. Acting on your advice, we gave daily baths and strictly natural diet. To our great satisfaction the condition of our child, extremely bad as it was, improved at once. In a *week* the child, bodily and mentally restored, was able again to take up the school-lessons.

I shall not fail to recommend your valued method of cure wherever I can, and with renewed thanks beg to remain,

Yours truly,

Schönefeld. Franz Anton B.

No. 108. Inflammation of the spinal-cord, Nervousness.

Dear Sir,

After having experienced what your method of healing has worked upon my body, I cannot refrain from writing to you.

I am 28 years of age and was suffering from *extreme nervousness* and *inflammation of the spinal-cord,* which medical treatment had brought so far, that I could neither sit nor walk, and was at last

declared by the medical men to be *incurable*. After using your system of cure, which had been recommended to me, for only twelve weeks, I was already well enough to get about with the aid of a stick, and to-day I am in the happy position of being able to *walk an hour or more without any stick at all*. I tender you my best thanks, and more

Yours very truly,

Berksdorf, near Zittau. Gustav S.

No. 109. Gastric catarrh, Cancer of the stomach, Induration of the liver, Enlargement of the spleen, Bladder and kuidney complaints, Constipation, etc.

Dear Mr. Kuhne,

I feel called upon to offer you my sincerest thanks for having, through your system of cure, freed me from a most dangerous illness. With the aid of the hip-bath, and appropriate manner of living which you ordered me, I have got rid of the complaints mentioned below, which fact I have much pleasure, *without solicitation*, in recording, in order to induce other sufferers to trust their cases to your method of cure. I suffered *for years* from *gastric catarrh*, which was threatening to bring on *cancer of the stomach*, and caused me the most dreadful torture and pain. In addition to this I was troubled with *induration of the liver, enlargement of the spleen, bladder and kidney complaints*, and *complete suppression of the stool etc.* All the medicines used, all the consultations of *various specialists* (Professors at the University Hospital), were not in the least able to induce regular motion of the bowels, much less to decrease my other disorders. Only since I have adopted your system, has ful vitality again entered into my whole body.

With a thousand thanks,

Yours very truly,

Tetschen on the Elbe. W. A.
Imperial Custom-house Officer.

No. 110. Advanced consumption.

Dear Mr. Kuhne,

After having made some very bad experiences with medical men, I bought your text-book "The New Science of Healing". My child, which was suffering from *advanced consumption*, had been given up by the physician, who declared that it was incurable. I treated it exactly according to your method including strict

natural diet. It is astonishing—the child to the surprise of every one has recovered.

With kindest regards,

I remain,

Yours sincerely,

Ludwigslust. (Mrs.) P. E.

No. 111. Burns.

My Dear Sir,

My youngest son, August, *scalded his right hand* with boiling water. It was fortunate that I possessed your book, and was thus in a position to treat the scalds according to your instructions. The result was astonishing: *within a week every burn was healed* and *not a single scar* has remained from the treatment. I feel the more thankful to you, because a similar thing happened to me some years ago, and not knowing anything of your system then, I consulted a medical man. Compared with your method, his treatment was like night to day. I am, therefore, happy to publicly award you every acknowledgement.

I am,

Yours very truly,

Tengern. Heinrich B.

No. 112. Affection of the stomach, Weakness of the chest, Pulmonary catarrh.

Having been restored to health by Mr. Kuhne's method of treatment, I feel called upon to publicly express my obligation to him.

For 16 years I suffered dreadfully from an *affection of the stomach, the bowels never moved unless through a purgative*, and during the last 4 or 5 years I have been, so to say, *unable to urinate.* I had also a *weak chest* and suffered from *pulmonary catarrh.* I consulted numerous physicians in Freiburg, Bern and Geneva, who were unfortunately unable to help me, not even being in a position to bring me a little relief. After having followed the *special instructions of Mr. Kuhne* for several weeks, I am again perfectly able to attend to my business, and *to conduct my hotel*, correspondence, book-keeping etc.

I feel myself again thoroughly well and equal to my work through following the diet and other prescriptions of Mr. Kuhne and this I am pleased to certify wholly unsolicited.

Schwarzseebad, (signed) E. W. S.

Canton Freiburg, (Switzerland).

No. 113. **Running from the ear, Headache, Polypus in the ear and throat, Discharge from the auditory ossicles.**

Dear Mr. Kuhne,

My son had been suffering for 7 years from *diseases of the ear and throat,* all medicines proving useless. Last September my child was troubled with *dreadful running from the ear* and *headaches;* wherefore I consulted a specialist for diseases of the ear, nose and throat. He diagnosed *polypus in the ear and nose* and advised operation, which was accordingly at once performed, After three weeks I had my child examined again, and this time the physician stated that there was a *discharge from the auditory ossicles,* and that a second operation was necessary. I consulted a homeopathic physician, but he confirmed the diagnosis.

Whilst on a journey, however, I happened to hear of *your establishment,* and I therefore travelled to Leipsic with my son. After treating my child for five weeks *according to your special instrutcions,* he was quite cured. I therefore look upon it as my duty, to send you my heartfelt thanks. Not myself possessing a copy of your book, "The New Science of Healing", and wishing, however, to have it, I beg you to kindly forward me a copy of the work. It is a veritable household treasure, and should not fail in any family.

I remain,

Yours very truly,

Vollmarshain. Bruno S.

No. 114. **Stone in the bladder, Easy parturition, Pulmonary affection.**

Dear Mr. Kuhne,

It affords me much pleasure to be able to report to you, that I am going on very well and feel again much better. And I can give a like report of other patients, who have made the best experiences with your method, when strictly followed. The young son of a miller, for instance, was suffering from *stone in the bladder,* and the treatment of the physicians was of no avail. At length he *followed your prescriptions exactly* and in a short time the stones dissolved and were expelled from the body by passing with the urine.

A woman, 37 years of age, who had already had several difficult births, and never been able to give the children the breast, likewise adopted yonr treatment. The result was that this time she *bore twins,* and had a *very easy birth, without the attendance of*

a midwife. And whereas the woman had *never* been able to suckle any of her former children, she had now abundant milk for both babies.

A youth suffering from *pulmonary disease* is now using your treatment, and his condition is steadily improving, although he has been declared incurable by the doctors. Your method makes great progress here.

Yours very truly,

Germania Costa de Serra, Brazil. H. S.

No. 115. **Disease of the eye, Eruption of the skin of the face, Disease of the throat, Diphtheria, Measles, Scarlet fever.**

Dear Mr. Kuhne,

It is still quite as difficult for me to-day, as ever, to find sufficient words to thank you for what I owe you. Although I was nearly always rosy cheeked and stout, I was frequently ill. Even as a little child I suffered from a painful *disease of the eye,* which, however, quitte disappeared as I grew older. From that time, however, I had a perpetual and troublesome *eruption of the skin,* especially of the *face.* Never a year passed but what I was seriously ill. Every year I suffered from *disease of the throat, diphtheria, measles* or *scarlet-fever,* often so seriously that my recovery was doubtful. When I now reflect how wretchedly ill I then was and how well I now am, I simply cannot find the words to describe my feelings. The *treatment you recommended me in your letter* was a radical one. My relations told me after I had recovered, hat my *physiognomy was quite another.* It is superfluous to assure you of my thorough belief in your system. I warmly recommend your method on every occasion.

Thanking you again from the bottom of my heart,

I remain,

Yours very sincerely,

Oettingen. Lina M.

No. 116. **Tuberculosed knee, Splinters of bone.**

Dear Mr. Kuhne,

I really do not know in which manner, and with what words, I can best give you a clear picture of my present frame of mind, and thank you for all the good services, you have rendered me.

I feel horrified now, when I think how my *tuberculosed knee* was treated by the doctors for 5 years, so that finally *the bone became splintered,* and I had to be operated upon. I am always telling of it. Suffice it here to say, that when, three months after the operation, the physicians declared I was quite cured, I myself felt *miserably* ill. You had the best proof of this, when I came to you for treatment. The knee, in spite of the bandage 10 yards long, which I had worn for 5 years, was swollen up again and had broken open at the place operated. After the very first day of your treatment, the bandage was no longer necessary. The knee assumed its normal size again and the wound became gradually smaller until it closed.

To-day I am in the happy position of seeing my leg healed, hence my sincere thanks, and my high respect for you. May God reward you for the good services you have performed for me and so many others; and may you. dear Mr. Kuhne, long be spared to your family to work many years yet for the good of mankind.

With many kind remembrances,

Believe me,

Most sincerely yours,

Czernowitz, Bukowina. Stefan S.,

Theological Student.

No. 117. **Spondylitis, Easy pregnancy.**

My Dear Sir,

The lady who is now my wife was suffering some time ago, as the physician said, from *spondylitis (inflammation of a vertebra).* For over two years she had always to keep in a reclined position and was treated orthopædically with *plaster bandages* etc., but without the disease becoming in any way better. She was finally given up by the physicians, who expected the formation of an abscess or the like. Just at this time her attention was called to your book; she purchased it, and sent it to me for my advice. I read the volume through, and advised the patient to make a serious trial of your system. The result was an astonishing one: the abscess expected by the doctors did *not* make its appearance. On the contrary, the patient's general condition improved considerably, so that she was soon able to rise and—to the astonishment of the physicians—walk without assistance. She was also able before long to discard the spine-jacket she had had to wear. Last year the patient given up by the physicians became my

wife, and I hope in these days will *present me with a healthy child.* Both of us, my wife and I, are convinced that it was your system curing diseases which saved her life. I beg, therefore, to be allowed to express my heartfelt thanks to you, both in my own name and in that of my wife.

With sincere good wishes,

I remain,

Zürich. Yours very faithfully,

M. von S.

No. 118. **Tuberculosis.**

Dear Mr. Kuhne,

I came into possession of your book, "The New Science of Healing", two years ago, and am now able to inform you, that I have obtained such remarkable results in my illness, *tuberculosis*, that I feel I owe you life-long thanks.

The daughter of an inn-keeper in this neighbourhood is a cripple and the medical men say that an improvement in her condition is impossible. Nevertheless I am convinced that something can be done. Will you be good enough to send me your opinion and advice?

I am,

Faithfully yours,

Obersteinach, Bavaria, Joseph H.

No. 119. **Trachoma.**

Dear Mr. Kuhne,

For five years I was suffering from *trachoma (Egyptian eye disease)*, and there was no medical man who could help me. I was compelled, therefore, to try your method, and obtained extraordinarily good results Within two months my eyes were quite clear and the disease has not returned.

If possible, I intend going to Leipsic next year in order to visit you and your far-famed establishment.

May I beg you to send me some 30 German and 30 Hungarian *gratis-leaflets* with reports of cures? I wish to *distribute them amongst my friends*. Believe me to be,

Very truly yours,

Budapest, Hungary. Karl T.

No. 120. Dropsy, Swollen legs, Headaches Constipation.

Dear Sir,

I have had your book about the New Science of Healing now for a year. At my recommendation many friends have procured it, and they all find it very good and practical. My wife, 32 years of age, had suffered since childhood from *constipation* and *headaches* and had been compelled to swallow all kinds of medicines and purgatives. Since using your cure, however, all these troubles have vanished, even her *swollen legs* and *dropsy* — as diagnosed by the physicians—have become well. I have myself used your baths with best success against *constipation.*

Please send me copies of your other works, including the volume on the Science of Facial Expression and a cookery book.

It will always be my earnest endeavour in the future, as now, to spread the principles of the New Science of Healing.

I remain,

Dear Sir,

Yours faithfully,

Bolkenhain (Silesia) Karl K.

No. 121. Hæmorrhoidal affection, Sleeplessness, Paroxysms of rage, Constipation.

Dear Sir,

After having dispensed with the services of my physicians who had treated me for three years without accomplishing anything at all, I commenced *following the advice you had sent me per letter.*

I took the baths *strictly according to your instructions,* and also the diet.

My wife and children have been astonished, when I have laughed sometimes recently, for that is something which I have not done for 3 years. My *bowels are now in order,* the *piles* and also *paroxysms* of rage, from which I suffered, are both cured; I can also sleep well, whereas formerly I have always suffered from *insomnia.*

Permit mo to tender you my sincere thanks, and believe me

Dear Mr. Kuhne,

Yours most truly,

St. Petersburg, Russia. H. W.

No. 122. **Liver disease, Constipation.**

Dear Sir,

Herewith allow us (Mr. B. and myself to offer you our best thanks for what you have done for us. We were in Leipsic in July 1893 and had such success with your cure that we always feel happy to reflect upon it.

Mr. B. was *suffering severely from the liver* and all friends here in Denmark look upon it as a real miracle that it was possible to cure him. I suffered from *constipation* and likewise was quickly cured.

We have many visitors coming and wishing to hear of your system and books. Please send me some of your *propaganda leaflets* in *Danish* and *Swedish,* and I will *distribute* them in Denmark, Norway, and Sweden. It is then easier for me to introduce your books and to convince people. Yours very truly,

Mordrupgaard, Denmark. (Mrs.) H. B.

No. 123. **Consumption, Cough, Discharge of mucus from mouth, Sputum containing blood.**

Dear Sir,

Overcome by my feelings, I cannot refrain from expressing my sincerest and warmest thanks for the *treatment you so carefully prescribed for me in my serious illness.*

I was suffering from *consumption* and *cough, discharge of mucus from the mouth,* and of *sputum containing blood.* I had had the disease for *8 years in severe form.* Neither domestic remedies, nor doctors, nor chemists served any purpose, on the contrary I became worse. The disease was chronic, to an extent no one imagined; my condition was in every way deplorable, and my faith in medical men vanished entirely.

On December 4th my attention was drawn to your New Science of Healing. *By following your treatment* I obtained relief already on the second or third day; my chronic complaint became better from week to week and now, after three months, is completely cured. I feel fresh and healthy, and only wish that all other sufferers would try your method that it may prove a perpetual source of comfort to sick humanity. It alone is the true means of curing all diseases.

I remain,

Yours very truly,

Plotzk, Gouvernement Bessarabia, Russia. Gottfried M. (44 years of age).

No. 124. **Dropsy, Pleurisy, Pulmonary consumption.**

Dear Mr. Kuhne,

I am only sending you these lines to express my sincere thanks for the excellent health which your method has restored to me. I have the greatest esteem for you, when I consider what you have done for me. You are a true saviour to sufferers.

For two years I had been suffering severely from *pleurisy* and had to keep my bed. *Dropsy* also made its appearance. The doctors tried to alleviate the trouble, but in vain, and I at last came to have a regular horror of professors and medical men generally. *Through your prescriptions alone,* I have been cured. On the very first day of the treatment, even, I felt better, and the *tumours* on the abdomen dissolved.

For my recovered health, I must again offer you my warmest thanks, Dear Mr. Kuhne, and beg to remain,

Yours very sincerely,

Binzikon, Switzerland. (Miss) Ida S.

No. 125. **Glandular swelling, Toothache, Eye disease, Pharyngeal catarrh, Pulmonary catarrh, Shortness of breath, Asthma, Pollutions.**

My dear Sir,

The writer of these lines, a missionary by profession, counts himself happy for having come to know and study your New Science of Healing. It was the simple fact that your book has been translated into 25 languages which drew my attention to it, I am now studying your Science of Facial Expression and other writings; and everywhere I go, I will spread a knowledge of your method.

I suffered severely from *toothache, swelling of the glands on both the right and left sides, dullness of the eyes, and slimed throat (pharyngeal catarrh).* Here in Schönau I followed your written instructions as closely as possible and the result was most happy. I have nothing whatever against your making use of this fact in your lectures, or where you may wish. I should, without doubt, have died of consumption in a few years; but as it is have come upon the right path in time, My *shortness of breath, pulmonary catarrh* and *asthma* have now been completely cured and likewise the *pollutions.*

With greatest respect and best regards,

Yours very faithfully,

Schönau. (Rev.) — E.

No. 126. **Easy pregnancy and birth.**

Dear Mr. Kuhne,

As you told us, so it has come about. My wife was *safely delivered* of a sturdy boy on April 3 rd. She had *followed your system* with the greatest energy before the accouchement, *exactly in accordance with your instructions.*

During pregnancy all went very well. At 9.30 the labour pains commenced, and at 9.45— that is, in a quarter of an hour— the child was born. My family physician, who attended at my request, had gone away again just an hour before the delivery, not expecting it for two days. Contrary to his expectations, the child arrived soon after his departure, so I officiated myself as accoucheur. After the delivery my wife felt quite well immediately; her first thoughts were of you, Mr. Kuhne: "That is all just as Mr. Kuhne predicted," were her first words.

Accept our sincerest thanks for *your most excellent advice.* Your book is, and will ever remain, a holy gospel.

Our family doctor, who called later, said that never in his whole 41 years' practice (he is 65 years of age) had he seen anything like this before. This case was a triumph for your system!

With kind regards from both Mrs. S. and myself,

I remain,

Truly yours,

Schloss L., Holland. A. S.,

Captain of horse.

No. 127. **Rectal fistula, Intestinal ulcer.**

Dear Sir,

I am in receipt of your further letter enquiring as to my condition after following your previous *letter of exact instructions.* With much pleasure I can inform you that the *rectal fistula* and the *intestinal ulcer* have been cured a fortnight ago. At first I was unfortunately unable to follow your instructions exactly; but afterwards carried out all your excellent advice. During the second week of January, I commenced to take 2 or 3 friction sitz-baths daily, but, on account of the severe cold, at a temperature of from 66⁰ to 68⁰ Fahr. I likewise followed out the diet very precisely and am now thoroughly well.

Wishing that your excellent volumes may obtain a large circle of readers,

I remain, with many thanks,

Holte, near Copenhagen, Denmark. Yours faithfully,

Julia L.

No. 128. **Extreme nervousness, Onanism.**

Herewith I beg to thank Mr. Kuhne for the help which he rendered me, through his system of cure, during the severe illness of my 3 year old child. Neither threats, nor punishment could prevent the condition. Friction sitz-baths and strict diet, however, cured my child completely of *nervousness* and *onanism.* With all conviction I recommend Mr. Kuhne's system everywhere.

(signed)
Leipsic. H. S.

No. 129. **Dropsy of the pericardium, Chronic asthma.**

Dear Sir,

For more than three years I have suffered from *dropsy of the pericardium* and *severe asthma.* I have been in the treatment of a number of military and civil physicians, even of the famous Professor P. of Cracow, but all in vain. It is through *your advice* and your text-book alone, that I have been cured, now 6 months ago, from my severe and dangerous illness. For this reason I beg to offer you my heartfelt thanks, and remain,

Very sincerely yours,
Rzeszów, Galicia. M. A.,
Clerk in the District Court Offices.

No. 130. **Articular rheumatism, Cardiac disease, Uterine cancer, Hæmorrhoids, Disturbance of the digestion, Indigestion, Pain in the side and back.**

Dear Mr. Kuhne,

As president of the Kuhne Society of this town, having a membership of over 300, and still more as a hearty admirer of your marvellous genius and high talent, I feel myself called upon to report to your how your system has made even the dying healthy, for too often are patients given up as doomed by frivolous and unthinking physicians. One patient *cured by your system,* was suffering in the last stage of *articular rheumatism,* which had already gone to the *heart.* A woman suffering from *uterine cancer* likewise adopted you system of cure. She had been treated already by *ten medical notabilities without success.* Amongst them was the director of the town hospital here, who commenced operating, but after having laid open the abdomen, feared to complete the operation, the patient being *extremely weak.* The

disease had gone so far that all the physicians stated the woman could not live longer than 3 months at the most. In spite of this, she has now lived 6 months, and her incurable disease has vanished. *I have followed your prescriptions* myself for more than a year and have so much improved in health, that I may consider myself as cured. My troubles were *hæmorrhoids* and *disturbance of the digestion,* which caused very unpleasant *disorders of the stomach, pains* in the *front, side* and *back.* You can make any use you deem advisable of the foregoing unsolicited testimony.

With best compliments and thanks,

I am,

Yours very truly,

Buenos-Aires. Vincente D.,
President of the
"Kuhne Nature Cure Society".

No. 131. **Disease of the eye.**

Dear Mr. Kuhne,

I owe you too many thanks to omit to briefly report to you the course of the disease of the eye which troubled my son, aged 12 years. After receiving your esteemed letter in reply to *my note asking for advice,* I strictly followed the *prescriptions you wrote.* How can I describe my astonishment? After three weeks of the baths my boy was nearly cured; in a week more he was quite well, and since that date nothing more is to be seen of the disease. The lad is perfectly healthy. What the doctors were unable to accomplish in 3 years, you, Sir, have brought about in 4 weeks by means of your system. Accept my heartiest thanks. I send you these lines wholly upon my own initiative; you may make whatever use of them you may consider to be in your interest.

Yours faithfully,

Remscheid-Hasten. G. F.

No. 132. **Stricture of the uretha.**

Dear Sir,

It is with pleasure that I take up my pen to report to you that your method of treatment which I have followed out *strictly in accordance with the instructions you sent me in your letter,* from August 23rd to October 1 st, has brought me good health.

At the commencement of the second week, the inflammation having gone down, the *stricture* disappeared, and to day I find no

difficulty in urinating with a strong stream, such as I was never able to do before, even when in ordinary health.

Pray accept then, Sir, my sincere and hearty thanks. God bless you and your excellent system; and may the latter find its way everywhere over the whole earth!

In a few days I shall be writing to describe to you the condition of Mrs. H., who has been suffering for 5 years from deafness, and beg that you will then kindly forward me a *letter of instructions*. I hope to be able to call upon you personally at an early date.

I remain,

Yours faithfully,

Altsohl, Hungary. J. H.,

Manufacturer.

No. 133. Public acknowledgement of thanks.

On my departure from Leipsic, I feel that I cannot neglect, *wholly unsolicited*, to *publicly* tender my thanks to Mr. Louis Kuhne, of 24 Flossplatz, Leipsic, for the remarkable cure which I have obtained by means of his approved system.

I am 66 years of age and suffered for a long time from that much-dreadet disease

Diabetes mellitus,

about which I consulted numerous physicians, but without any success. Some Barmen friends then drew my attention to *Kuhne's New Science of Healing without Drugs and without Operations*. I accordingly travelled to Leipsic and conscientiously followed out all Mr. Kuhne's special instructions.

After a fortnight's treatment the sugar had diminished from 1.85% to 1.10%; and after another week it had *altogether disappeared*. Other tests, made after 4 and 5 weeks' treatment, likewise showed no traces of sugar. All this was certified to, quite *independently of each other*, by the sworn analysts to the Leipsic Law Courts, Dr. Röhrig, Dr. Elsner, Dr. Bach and Dr. Prager.

With a good conscience, therefore, I can *thoroughly recommend Kuhne's system of treatment* to all sufferers, the more so since I have personal acquaintances both here and in Barmen who have been cured by Mr. Kuhne.

L. B., of Barmen,

Leipsic, August 8th 1898. Manufacturer.

Some Examples

Illustrative of the Science of Facial Expression.



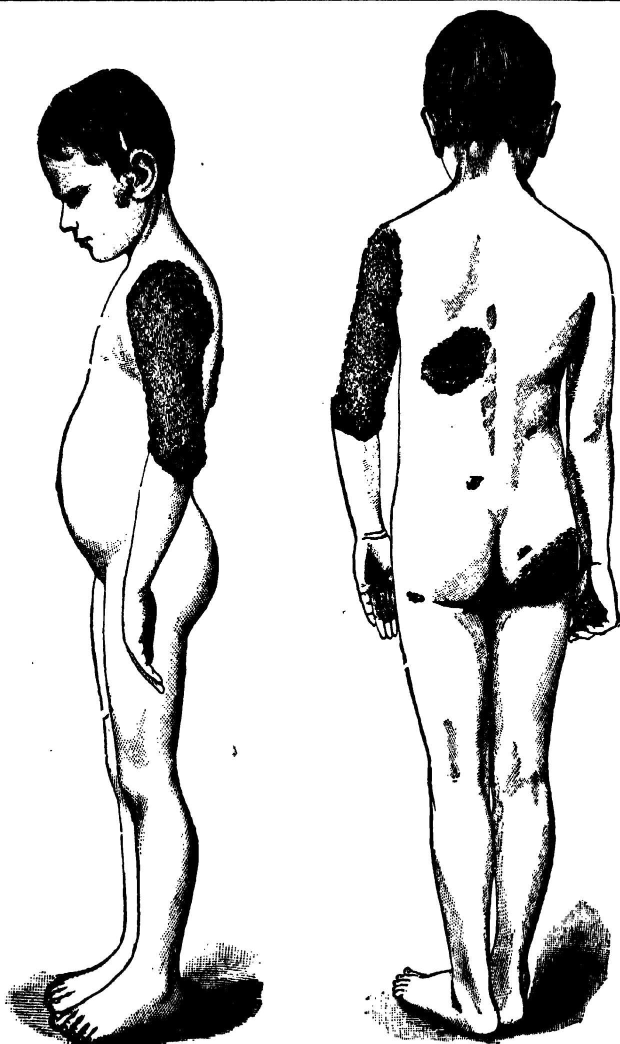
Exclusively Front Encumbrance.



Exclusively Back Encumbrance.



Front, Side and Back Encumbrance, Front Encumbrance preponderating.



Child inoculated 45 times with tuberculin, and the results of same.

For particulars see my pamphlet "The Rearing of Children". Price 6 d.

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Kuhne

New science of healing

demi moins toxique que la cocaïne et deux fois et demi plus toxique que la novocaïne (1). Ses solutions aqueuses peuvent être stérilisées par la chaleur.

Pour l'anesthésie profonde, on emploie une solution à 0 gr. 20 %; pour l'anesthésie rachidienne, il suffit de 5 à 6 cc. d'une solution à 0 gr. 50 %. Pour l'anesthésie superficielle, on peut employer des solutions un peu plus concentrées. Dans tous les cas, il est bon d'ajouter à la solution stérilisée de panthésine, de l'adrénaline, dans la proportion de 1 ‰ (2).



PANTHOCAÏNE

Chlorhydrate de parabutylaminobenzoyldiméthylaminoéthanol.

C'est une poudre blanche, en aiguilles cristallines, soluble à froid dans 7 parties d'eau ou d'alcool, plus soluble à chaud. Sa solution aqueuse est neutre et stable à l'ébullition ; son point de fusion : 150°.

Cet anesthésique local, voisin de la novocaïne et de la tutocaïne, convient pour l'anesthésie des muqueuses en solutions très étendues. Il est très peu toxique ; l'anesthésie obtenue est de très longue durée.

Pour la méthode dite d'infiltration, on emploie la solution à 1 ‰, additionnée d'adrénaline et de chlorure de sodium à un pH voisin de 7. Pour l'anesthésie locale et l'anesthésie lombaire, on emploie des solutions de 2 à 5 ‰. Il suffit d'une injection rachidienne de 1 cm^3 5 à 2 cm^3 de cette dernière solution.



PAPAVÉRINE ET SES DÉRIVÉS

PAPAVÉRINE

1. GEZA DE TAKATS. — *Journ. Ann. Méd. Ass.*, 1936, CVI, 1003.
2. P. LEBEAU et G. COURTOIS. — *Trait. Pharm. Chim.*, 1938, II, 1523.

La Papavérine est un alcaloïde à noyau isoquinoléique extrait de l'opium, dont on utilise le chlorhydrate, poudre blanche fondant à + 209°, assez peu soluble dans l'eau et dans l'alcool (2).

Ses solutions injectables seront préparées aseptiquement au moment du besoin.

C'est un hypotenseur, un vasodilatateur et un analgésique qui ralentit et renforce les contractions cardiaques. Il est indiqué en cas d'oblitérations artérielles à la dose de 0 gr. 03 dissous dans 1 cm³ de sérum physiologique, en injections intraveineuses, poussées lentement, dans les 6 premières heures qui suivent l'oblitération(1). On l'emploie également par voie intra-veineuse ou sous-cutanée contre les spasmes et les crises douloureuses gastriques, les coliques, les vomissements et la diarrhée des enfants (2).

PERPARINE

Synonyme : **Chlorhydrate de la 6-7 diéthoxy-1 (3'-4') diéthoxybenzylisoquinoléine.**

R. Weitz. — *F. M. N.*, 1935, 325.

Alcaloïde synthétique préparé à partir de la papavérine. On emploie le chlorhydrate correspondant, poudre cristalline, légèrement jaunâtre, fusible vers 188°, peu soluble dans l'alcool ou dans l'eau froide, plus soluble dans l'eau bouillante, très soluble dans le chloroforme. La solution à 4 % est colorée en jaune paille et légèrement acide au tournesol.

Comme la papavérine, la perparine supprime les spasmes des muscles lisses et diminue l'hypertonie. Elle est indiquée dans les ulcères de l'estomac et du duodénum, les spasmes de l'estomac, de l'intestin ou des voies biliaires, l'ictère catarrhal, les crises gastriques des tabétiques, l'angine de poitrine, la dysménorrhée.

Par voie sous-cutanée ou intramusculaire, on injecte des solutions de 1 à 4 °/₀₀, à raison de 1 ou 2 ampoules de 1 cm³ ; par voie intraveineuse, on doit injecter des doses moitié moindres, soit 0 gr. 01 à 0 gr. 02 à la fois.

SYNTHAVÉRINE

Synonyme : **Eupavérine.**

R. Weitz. — *F. M. N.*, 1935, 413.

C'est la (3'4) méthylène dioxybenzyl 3 méthyl (3-6) méthylène dioxyisoquinoléine, dérivé synthétique voisin de la papavérine.

Elle est antispasmodique, sédative des contractions doulou-

reuses des muscles lisses, moins toxique et plus efficace que la papavérine.

Elle est présentée en ampoules 0 gr. 03 pour 1 cm³, convenant à la voie sous-cutanée et à la voie intraveineuse, et utilisée à la dose de 1 à 2 ampoules par jour.

◆◆ ◆◆

PECTINE

1. H. VIOLLE et L. de SAINT-RAT. — *Bull. Ac. Méd.*, 4 novembre 1924.
2. H. VIOLLE et L. de SAINT-RAT. — *C. R. Ac. Soc.*, 1925, CLXXX, 603.
3. H. MARÉCHAL. — *Bul. Ac. Méd.*, 1930, CIII, 312.
4. WEITZ. — *F. M. N.*, 1935, 319.

La pectine est un produit amorphe, neutre, soluble dans l'eau, dextrogyre, découvert en 1831 par BRACONNOT qui l'avait appelé « principe gélatineux des fruits ». Selon EHRLICH, ce serait le sel de calcium et de magnésium de l'acide anhydroarabinogalacto-méthoxy-tétragalacturonique (4).

VIOLLE et de SAINT-RAT ont montré que ses solutions à 1 ou 2 % sont dépourvues de toxicité et de pouvoir anaphylactisant. Elles augmentent très notablement la vitesse de coagulation du sang, sans en modifier les autres caractères, surtout après addition de 0 gr. 50 % de chlorure de calcium qui joue le rôle de co-ferment. Ces solutions sont stérilisables et injectables par voie sous-cutanée ou intramusculaire, à la dose de 20 cc., une ou deux fois par jour, dans les cas d'hémorragies massives ou persistantes (1), (2). Les propriétés hémostatiques de la pectine ont été également étudiées par MARÉCHAL (3).

◆◆ ◆◆

PEPSINE

1. M. LOEPER. — *Communication à l'Ac. Méd.* du 23 avril 1929, in *U. P.*, 1929, LXX, 169.
2. M. LOEPER et M. DEBRAY. — *Com. Soc. Ther.* du 8 octobre 1930, in *U. P.*, 1930, LXXI, 356.
3. K. GLAESSNER. — *P. M.*, 1932, nº 3, 61.
4. M. DEBRAY et A. ROY. — *Com. Soc. Méd. des Hôp.*, du 1er juin 1934, in *U. P.*, 1934, LXXV, 354.
5. M. LOEPER et M. DEBRAY. — *La Méd. Int.*, III, mai 1937, in *U. P.*, 1937, LXXVIII, 298.

LOEPER a préconisé les injections sous-cutanées de pepsine

d'abord chez les hypopeptiques, les hypotoniques, les constipés atones, les tachycardiaques et les hypertendus, ensuite et surtout chez les ulcéreux. Les rénaux et les diabétiques seraient particulièrement sensibles à ce médicament et ne doivent en recevoir que de faibles doses (1).

Les injections de pepsine pure employées tout d'abord, ont provoqué souvent chez les ulcéreux des réactions un peu vives ; réactions précoces, érythémateuses, chaudes et douloureuses. Aussi Loeper et Debray ont-ils eu recours à une préparation de Bousquet contenant par cc. : 0 gr. 10 de pepsine en paillettes (titre 100), additionnée de benzoate de soude en quantité suffisante pour rendre le soluté neutre et limpide. On peut, soit préparer ce soluté aseptiquement, soit le filtrer à la bougie. L'adjonction de benzoate de soude enlève à la pepsine toute acidité et toute causticité, la rend incolore et ne nuit pas à son action thérapeutique.

On fait une première injection de 1 cc. dans les muscles fessiers pour juger de la tolérance du sujet. Les doses suivantes sont de 2 cc. répétées 3 fois par semaine, jusqu'à concurrence de 15 injections. Observer un repos de 6 semaines et refaire une deuxième série de 12 injections à raison de 2 ou 3 par semaine si les douleurs reprennent (2), (5).

Mais certains ulcéreux ne retirent aucun bénéfice de la pepsinothérapie intramusculaire, telle qu'elle a été préconisée par Loeper ; Debray et Roy ont alors pensé qu'il fallait agir directement sur la muqueuse digestive lésée. Dans l'impossibilité d'atteindre la muqueuse gastrique, ils ont pratiqué les injections dans celle de la bouche : 0,1 cc. la première fois, puis 0,2 et 0,3 cc. de solution à 0 gr. 05 de pepsine par cc., au moyen d'une seringue de Barthélemy et d'une aiguille fine à biseau moyen pour injections intradermiques. La série comporte 12 injections par mois à raison de 3 par semaine (4), (5).

K. Glaessner de Vienne a employé une solution strictement neutre de pepsine, filtrée sur bougie de porcelaine et additionnée de phénol pour en assurer la conservation. Il pratique deux séries de trente injections hypodermiques quotidiennes par an, les doses croissant de 0,2 cc. à 0,5 cc. puis décroissant jusqu'à 0,2 cc. (3).

PEPTONE

1. Pasteur-Vallery-Radot, P. Blamoutier et P. Giroud. — *P. M.*, 16 décembre 1925, p. 1649, in *B. S. P.*, 1926, XXXIII, 623.
2. P. Bruère. — *Bull. As. Doct. Pharm.*, 1926, XV, 74.
3. P. Cantonnet. — *Bul. Ac. Méd.*, 22 février 1927, in *B. S. P.*, 1928, XXXV, 620.
4. René Mathieu, G. Lévy et Lautmann. — *Com. Soc. Péd.*, 19 avril 1932, in *U. P.*, 1933, LXXIV, 201.
5. P. Harvier. — *Le Choc en Thérapeutique*, Paris, 1934.
6. T. Bertrand-Fontaine et J. L'Hirondel. — *Bul. Gén. Ther.*, 1936, nº 9, in *U. P.*, 1937, LXXVIII, 267.

On n'emploie comme peptones injectables que des peptones totalement solubles dans l'eau : peptones de Witte (peptone de fibrine) ou peptone pepsique de viande de bœuf (1), (2).

La formule pour injections intramusculaires ou sous-cutanées a été donnée par Nolf et reprise par Nobécourt et Tixier :

Peptone de Witte	5 gr.
Chlorure de sodium	0 gr. 50
Eau distillée	100 gr.

Faire 8 injections de 3 à 4 cc. séparées par des intervalles de 2 à 4 jours comme traitement de l'hémophilie (6).

L'injection intraveineuse de 5 cc. de solution de peptone à 5 % est un des moyens employés pour réaliser le « grand choc » thérapeutique ; 15 à 20 minutes après il se produit un frisson violent avec hypotension, tachycardie et une hyperthermie qui dure 1 ou 2 heures. Les choses rentrent dans l'ordre à la suite d'une crise sudorale (5).

Par voie intradermique, on a employé des solutions aqueuses soit à 50 % contre l'asthme, le coryza, le rhume des foins (1), (2) ; soit à 7 % contre le prurigo strophulus (4).

Quel que soit le soluté employé, on le stérilise une première fois à + 120º pendant 15 minutes ; on filtre à chaud, on répartit en ampoules et on stérilise à nouveau. Un simple chauffage à l'ébullition peut remplacer la première stérilisation (6).

Cantonnet a traité l'asthme par une série de 20 à 25 injections intramusculaires quotidiennes de 1 à 3 cc. de mélange extemporané d'une solution de polypeptone iodée à 5 % et d'une solution de chlorure de calcium à 1 gr. 50 % (3).



PERCAÏNE

Synonymes : **Chlorhydrate de l'α-butyloxycinchoninate de diéthyléthylidène-diamide. — Nupercaïne.**

1. R. Höfer. — *Klin. Woch.*, 1929, VIII, 1249.
2. Anonyme. — *Pharm. Zeit.*, 1929, XLV, 745.
3. R. Charonnat. — *B. S. P.*, 1930, XXXVII, 555.
4. R. Hazard. — *Gaz. Hôp.*, 20 mai 1933, in *U. P.*, 1933, LXXIV, 326.
5. R. Weitz. — *F. M. N.*, 1923, 323.
6. B. Prusik. — *Com. XXIVe Congrès de Médecine*, Paris, octobre 1936, in *P. M.*, 1936, nº 91, 1779.

La percaïne, née d'observations de Morgenroth sur la quinine, est le chlorhydrate de la diéthyléthylidène diamide de l'acide butyloxycinchoninique ; son noyau formateur l'apparente à l'atophan. Elle se présente comme une poudre cristalline blanche insoluble dans l'éther et les huiles grasses, très soluble dans l'eau en donnant des solutions stables seulement en milieu légèrement acide car les alcalins libèrent la base peu soluble. Même diluées, elles peuvent être stérilisées à + 100° (3), (4), mais il ne faut pas dépasser cette température pour éviter les altérations du produit ; on peut également leur ajouter un antiseptique non alcalin (2), (5).

La percaïne est un anesthésique local actif, à de faibles concentrations ; son action se prolonge pendant 5, 6 et même 12 heures, son élimination est très lente. On lui ajoute généralement de l'adrénaline qui compense son action légèrement vasodilatatrice et tend à augmenter ses effets anesthésiques (1), (4). Cependant cette addition ne devrait être faite qu'après la stérilisation au moment de l'emploi (3), (5).

Pour obtenir l'anesthésie par infiltration, on pratique des injections très sous-dermiques de solutions à 1 ou 2 ‰ renfermant 11 gouttes de solution officinale d'adrénaline par cc. sans jamais dépasser 200 cc. de la première ou 100 cc. de la seconde ; les doses habituelles varient entre 50 et 100 cc. Pour l'anesthésie rachidienne, on utilise des ampoules de 20 cc. de solution à 1 pour 1500 ou de 2 cc. à 5 pour 1000. La dose maxima est en tous cas de 0 gr. 004 par kilogr. de poids corporel et l'on devra éviter toute injection intraveineuse (3).

Comme traitement de l'angine de poitrine et de l'hyperthyroïdie,

on peut infiltrer le ganglion stellaire et le sympathique paravertébral avec 10 à 20 cc. de solution de percaïne à 2 % (6).



PÉTROLE

1. S. Artault de Vevey. — *Com. Soc. Ther.*, 13 mars 1929, in *U. P.*, 1929, LXX, 200.

S. Artault de Vevey a constaté que les tuberculeux glycosuriques qui recevaient des injections de préparations à base de pétrole présentaient une réduction notable du glucose éliminé ; il a ensuite généralisé cette thérapeutique aux diabétiques glycosuriques.

Il injecte une solution de pétrole à 10 % dans l'huile d'olive stérilisée, à raison de 5 à 10 cc. par dose.

Le pétrole employé est du pétrole blanc rectifié. Les injections intramusculaires sont mieux tolérées que les sous-cutanées. On les pratique alternativement à droite et à gauche, dans la fesse de préférence ; mais il faut laisser de temps en temps (au bout de 20 piqûres par exemple) les muscles se reposer pendant 15 jours ou bien changer de territoire d'injection (1).



PHÉNOL

Synonymes : **Phénol neige. — Benzophénol. — Oxybenzol. — Acide phénique — Acide carbolique.**

1. Baculli. — *Nouveaux remèdes de Poulenc*, 1917.
2. A. Barola. — *P. M.*, 1931, 52, 114.
3. Synn Suvansa. — *Ann. de Merck*, 1932, 33.
4. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, II, 88.

Le phénol officinal est le phénol pur industriel qui se présente en aiguilles incolores, caustiques et d'odeur caractéristique. Il fond à + 41° et donne avec l'eau un hydrate à 1/2 molécule d'eau fondant à + 16°. Additionné de 1/10e de son poids d'eau il donne le phénol liquide du Codex, liquide homogène constitué par une dissolution d'eau dans le phénol. Il est soluble dans 11,4 parties d'eau à + 20° en donnant une solution neutre, il est soluble dans tous les solvants organiques usuels.

Il est inaltérable lorsqu'il est rigoureusement pur, mais se colore en rouge à l'air, par fixation d'oxygène en présence de la moindre impureté.

Il donne des mélanges liquides avec certains solides, tels que le camphre, le chloral, le thymol, le menthol. Il est soluble dans les alcalis en formant des phénates alcalins parfaitement définis (4).

Les solutions de phénol seul dans l'eau, l'huile de vaseline neutre ou l'huile d'olive lavée à l'alcool peuvent être stérilisées à + 110° + 120° à l'autoclave ; on les conservera dans des récipients en verre jaune.

Le soluté aqueux à 2 ou 3 % a été préconisé en injections sous-cutanées à raison de 1 à 2 cm³ par jour, comme antithermique et présenterait selon Baculli (1) une efficacité réelle contre le tétanos à la dose de 1 cm³ répétée 4 ou 5 fois le jour, (2) (3) et contre le hoquet post-grippal, à la dose de 3 cm³. Dans les cas de névrites, on peut injecter en divers points du trajet du nerf malade 1 cm³ du soluté suivant :

Phénol	0 gr. 20
Chlorhydrate de morphine	0 gr. 10
Eau distillée, q. s. pour	10 cm³

A stériliser en l'absence d'air à + 110° pendant 20 minutes en ampoules de verre neutre.

Maurange a proposé d'injecter dans la zone enflammée entourant les anthrax 1 à 5 cm³ du soluté suivant :

Phénol	3 gr.
Glycérine, Eau distillée aa	15 gr.

Enfin la solution huileuse à 5 % est employée pour scléroser les nodules hémorroïdaires.

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PHÉNOLPHTALÉINE

(Dérivés de la)

1. A. Gosset et G. Loewy. — *Pres. Méd,*. 5 sept. 1925, in *U. P.*, 1926, LXVII, 5.
2. P. Bruère. — *Arch. Méd. et Pharm. Milit.*, février 1928, in *U. P.*, 1928, LXIX, 226-229.
3. R. Weitz. — *F. M. N.*, 1935, 328.

4. R. Weitz. — *F. M. N.*, 1935, 431.
5. G. Boschi. — *P. M.*, 1937, n° 83, 1452.

Les dérivés injectables de la phénolphtaléine ne sont en général pas des médicaments, mais des produits destinés, soit à l'investigation radiologique, soit à des épreuves d'exploration fonctionnelles.

PHÉNOL-SULFONEPHTALEINE

Synonyme : **Rouge de Phénol.**

Poudre cristalline rouge foncé stable à l'air ; très peu soluble dans l'eau distillée neutre, peu soluble dans les solvants organiques, elle se dissout assez facilement dans les solutions d'alcalis ou de carbonates alcalins, notamment le bicarbonate de soude, en donnant une coloration rose.

Elle figure à la pharmacopée des États-Unis de 1925 ; on l'utilise pour l'exploration fonctionnelle du foie. On injecte 4 cc. de solution, soit 0 gr. 006 de produit dans la masse sacrolombaire ou dans la veine du pli du coude. Le malade ayant au préalable vidé sa vessie, on le fait uriner deux et six heures après l'injection ; on dose colorimétriquement la phtaléine éliminée par les urines. L'élimination doit être au moins de 50 % dans la première heure et complète en quatre ou cinq heures.

La phénolsulfonephtaléine très pure, en solution à 5 °/₀₀, légèrement alcalinisée par le bicarbonate de soude a été appliquée au traitement de certaines maladies nerveuses (sclérose en plaques, chorée, etc...) : après avoir introduit 1 ou 2 cc. de cette solution dans une seringue de 5 cc., on soutire 5 cc. au moins de liquide céphalo-rachidien avec une autre seringue ; on adapte à l'aiguille à ponction lombaire, laissée en place, la seringue contenant la phénolsulfonephtaléine. On aspire un peu de liquide céphalo-rachidien pour diluer la solution médicamenteuse que l'on injecte assez lentement. On injecte ensuite dans les muscles fessiers 5 cc. du liquide céphalo-rachidien prélevé dans la 2e seringue. Le malade doit garder le lit 8 jours.

PHÉNOLTÉTRABROMOPHTALEINE

Synonymes : **Tétrabrome. — Tétrabromophénolphtaléine disodique.**

Ce corps renferme 47 % de brome et plus de 6 % de sodium. Il

correspond au tétraïode (voir plus loin) par simple substitution halogénée. Il a été utilisé par GRAHAM en 1924 pour l'examen radiographique de la vésicule biliaire. Toutes choses égales d'ailleurs, le tétrabrome donne une opacité deux fois moindre que le tétraiode qu'on lui préfère généralement.

On dissout à chaud 4,50 gr. de produit dans 40 cc. d'eau distillée stérile et on pousse l'injection très lentement dans une veine du bras, en deux fois séparées par un repos d'une dizaine de minutes. Chaque injection doit durer 5 à 10 minutes. L'on observe souvent ensuite des malaises assez impressionnants. L'ombre de la vésicule biliaire se perçoit cinq heures après en moyenne.

PHÉNOL TÉTRACHLOROPHTALÉINE

Synonyme : **Tétrachlore.**

Matière colorante proposée par ROSENTHAL, en 1924, pour l'exploration fonctionnelle du foie. La méthode est basée sur l'élimination plus ou moins rapide du colorant que l'on dose au bout d'un temps déterminé dans le sérum sanguin.

C'est une poudre rosée, stable à l'air, très peu soluble dans l'eau, soluble dans les solutions alcalines, l'alcool et le chloroforme.

Pour l'usage, on prépare une solution à 5 % dans la soude N/5 et on en injecte, par voie intraveineuse, 1 cc. (soit 0 gr. 05 du produit) pour 10 kilogr. de poids corporel. Cette dose est diluée immédiatement avant l'emploi dans 10 ou 15 cc. de solution de chlorure de sodium à 8 °/oo.

Dans le sérum d'un sujet normal, la coloration maxima est atteinte en quelques minutes ; l'examen colorimétrique se fait après addition de solution aqueuse de soude à 5 % (2), (3).

PHÉNOL TÉTRAIODOPHTALÉINE

Synonymes : **Foriod. — Iodéikon. — Iodotétragnost. — Radiotétrane. — Tétraiode.**

On utilise son sel disodique en cholécystographie, à cause de son opacité aux rayons X et de sa moindre toxicité. Pour l'obtenir, on dissout une molécule de phénolphtaléine (318) dans de l'eau renfermant une molécule d'hydroxyde de sodium (40). D'autre part, préparer une solution iodo-iodurée renfermant 4 atomes d'iode (127 × 4) ; mélanger les deux solutions et au bout de quel-

ques minutes précipiter la phénoltétraiodophtaléine (822) par addition ménagée d'acide chlorhydrique. La coloration violacée initiale vire au bleu, puis au jaune. On redissout le précipité dans une solution aqueuse de soude à 20 % et on le précipite à nouveau par l'acide chlorhydrique ; on filtre et on lave. On dissout le produit dans de l'alcool à 95° contenant deux molécules d'hydroxyde de sodium (40 × 2) on évapore rapidement cette solution bleue violacée à l'abri du gaz carbonique (qui décompose le tétraiode) et on l'étend en couche mince à l'état pâteux sur des plaques de verre. On obtient une pellicule qui se soulève en paillettes brillantes que l'on conserve en ampoules colorées contenant 5 à 10 gr. de produit (2).

C'est un corps bleu foncé, légèrement altérable à l'air et à la lumière, facilement soluble dans l'eau distillée, en donnant une solution bleue foncée qui précipite sous l'action du gaz carbonique. Par précaution, on recommande de conserver le tétraiode à l'état pulvérulent dans des ampoules scellées en verre foncé (4).

On l'emploie en solution à 5 % dans l'eau distillée en injection intraveineuse. La dose nécessaire, 0 gr. 04 par kilogr., soit 2 gr. 40 pour un homme de 60 kilogr. est dissoute dans 50 cc. d'eau distillée ; la solution bleue sombre ainsi obtenue est stérilisée par un séjour de 15 minutes au bain-marie bouillant ; elle doit être préparée extemporanément.

Des solutions vieilles de 24 heures peuvent être employées sans danger à condition d'être conservées à l'abri de la lumière dans des flacons bien bouchés.

L'injection est faite à 8 h. 30 du matin dans une des veines du pli du coude, dans le sens du courant veineux, le malade étant couché ; le volume total de 50 cc. est injecté très lentement en une seule fois, en cinq minutes environ. Il faut éviter soigneusement la pénétration du soluté dans le tissu cellulaire sous-cutané. Dix minutes après la fin de l'injection, le malade peut se lever ; on le garde habituellement une heure en observation ; il reste à la diète hydrique pendant 24 heures. Les radiographies sont prises à la 8e et à la 24e heure (1).

Selon JOHNSON et HITZROT, le tétraiodophénolphtaléinate de caesium est moins toxique en injections intraveineuses que le sel de sodium. On obtient la même opacité de la vésicule avec une quantité plus faible de sel de caesium.

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PHÉNYLCINCHONINIQUE
(dérivés de l'acide)

1. P. LEBEAU et G. COURTOIS. — *Trait. Pharm. Chim.*, 1938, II, 1170.
2. M. LOEPER. — *Com. Soc. Thér.*, 10 janvier 1940, in *P. M.*, 1940, nº 16-17, 210.
3. M. LOEPER et R. MANDE. — *Com. Soc. Méd. Hôp.*, 12 janvier 1940 in *U. P.*, 1940, LXXXI, 105.

L'acide phénylcinchoninique ou phénylquinoléine-carbonique, spécialisé sous le nom d'Atophan, n'est pas employé comme médicament injectable car il est insoluble dans l'eau à la température ordinaire. On trouve dans le commerce une association à parties égales d'atophan sodique et de salicylate de soude contenant 0 gr. 50 des deux sels pour 5 cc. de soluté à employer comme spécifique de la diathèse arthritique, en injections intramusculaires ou intraveineuses. Son emploi doit être surveillé de très près car il peut provoquer des ictères parfois assez graves (1).

LOEPER a récemment employé le dérivé lithiné de l'atophan en injections intraveineuses lentes, continues, à la dose de 0 gr. 50 dans 200 cc. de sérum glucosé ; le débit était de 4 cc., soit 0 gr. 01 de produit par minute. Les indications de ce traitement sont les névralgies du trijumeau, les arthrites, l'asthme et les tumeurs osseuses secondaires (2), (3).

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PICROTOXINE

1. P. LEBEAU et G. COURTOIS. — *Trait. Pharm. Chim.*, 1938, II, 1872.
2. E. KLINE, F. BIGG et A. K. WHITNEY. — *Ann. de Merck*, 1939, II, 239.
3. Ph. PAGNIEZ. — *P. M.*, 1940, Nº 5, 57.

La Picrotoxine est un principe amer extrait de la coque du Levant (Anamirta Cocculus, Ménispermacées) ; la drogue est épuisée par l'alcool bouillant, la liqueur alcoolique après addition d'eau est traitée par l'acétate de plomb à l'ébullition ; la picrotoxine est séparée et purifiée par cristallisations successives dans l'eau et dans l'alcool, après élimination du plomb par l'hydrogène sulfuré. C'est un corps ternaire dont la constitution n'est pas en-

core complètement élucidée et qui se comporte comme une dilactone.

Elle se présente en petits prismes rhomboïdaux droits, incolores, neutres, fondant à + 200°, peu solubles dans l'eau froide et dans l'éther, plus solubles dans les autres solvants organiques et dans l'eau chaude. Son pouvoir rotatoire est : α_D = — 29°,26. Ses solutions sont fortement réductrices (1).

Ses solutions injectables titrent de 0 gr. 001 à 0 gr. 003 par centimètre cube et sont stérilisables à + 100° pendant 30 minutes, ou mieux par 3 chauffages semblables.

C'est un antidote de l'intoxication barbiturique employé surtout à l'étranger, par voie sous-cutanée ou intra-veineuse, à la dose de 1 cm³ de l'une ou l'autre solution ; (le soluté fort doit être injecté à raison de 1 cm³ par minute) ; les injections seront répétées à des intervalles de 10 à 30 minutes jusqu'au retour des réflexes pupillaire et cornéen. On doit l'utiliser concurremment avec des lavages d'estomac, des purgatifs et avec l'oxygénothérapie. Administrer ensuite des diurétiques et du sérum glucosé (2), (3).

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PILOCARPINE

1. S. Sfintescu. — *P. M.*, 1924, n° 100, 992, in *B. S. P.*, 1926, XXXIII, 60.
2. *Form. Pharm. Seine.*

La pilocarpine, alcaloïde liquide du jaborandi, n'est utilisée en hypodermie que sous forme de sels et en particulier de chlorhydrate cristallisé, incolore, déliquescent, très soluble dans l'eau et dans l'alcool, insoluble dans l'éther. Ses solutions, très perméables aux rayons X, ne sont pas altérées par eux, elles sont stérilisables à l'autoclave à + 120° pendant une demi-heure dans des ampoules ou ballons de verre neutre ; il ne se produit aucun trouble ni précipité ; la déviation polarimétrique reste semblable à celle des solutions non chauffées.

Cependant, d'après Mossler, il y aurait au delà de + 100° une légère formation d'isopilocarpine. Le procédé indiqué dans le formulaire des hôpitaux militaires est le chauffage à + 100° répété trois jours de suite pendant 20 minutes.

Les taux des solutions habituellement employées sont : 1 % et 0,50 % en ampoules de 1 cc. ; les doses varient de 0 gr. 005 à

0 gr. 025 par 24 heures. Le chlorhydrate de pilocarpine est un vagomimétique employé comme sialagogue, contre les vertiges labyrinthiques, les rétentions d'urine réflexes et les crises d'éclampsie (1), (2).



PIPÉRAZINE et ses dérivés

Synonymes : **Diéthylène-diamine.**

1. A. MANCINI. — *Bol. Soc. Ital. Biol. Sper.*, 1935, X, 966.
2. P. LEBEAU et G. COURTOIS. — *Trait. Pharm. Chim.*, 1938, II, 114.

La Pipérazine existe sous plusieurs formes :

1° La pipérazine anhydre, cristallisée en tablettes ou en lamelles incolores fondant à + 104°, déliquescentes, solubles dans l'eau et dans l'alcool, insolubles dans l'éther.

2° Les hydrates de pipérazine dont le plus stable contient 6 H^2O et constitue depuis 1920 le produit officinal ; il fond à + 44° et présente les mêmes caractères de solubilité que le produit anhydre, il contient environ 56 % de base (2). MOUREU a fait observer, il y a longtemps, qu'il faut préférer dans la pratique pharmaceutique l'hydrate à la pipérazine anhydre peu stable à l'air.

Les solutions injectables à 30 %, seront stérilisées en récipients fermés pour éviter l'action de l'acide carbonique de l'air, à + 100° au bain-marie pendant une demi-heure, au besoin même à + 110° à l'autoclave.

La pipérazine donne avec l'acide urique un urate soluble d'où son emploi dans le traitement de la goutte et de la gravelle à la dose de 0 gr. 30 par jour, par fractions de 0 gr. 05 à 0 gr. 10 en injections sous-cutanées (2).

La combinaison de la pipérazine avec l'acide phénylquinoléine carbonique ou atophan, connu pour son action sur l'élimination de l'acide urique, donne un produit extrêmement soluble dans l'eau et parfaitement stérilisable à + 120°. Il est de plus, doué d'une très faible toxicité (1).



PLASMOQUINE

Synqnymes : **Beprochine. — N-diéthylamino-isopentyl-8-amino-6-méthoxy-quinoléine. — Praequine.**

1. R. Weitz. — *F. M. N.*, 1935, 339.

Nouveau composé appartenant à la même série que les alcaloïdes des quinquinas. Poudre cristalline, jaune rouge, soluble dans l'eau et dans l'alcool.

Médicament très actif à doses peu élevées, dans les cas de paludisme, et pas particulièrement toxique aux doses fortes.

Il existe une solution à 1 %, en ampoules de 1 cm³, 2 et 3 cm³, injectables par voie intraveineuses ou intramusculaire.



PLOMB

1. J. Lavedan. — *Paris Médical*, 1927, n° 16, 377.
2. Clark et Pickett. — *Journ. Am. Chem. Soc.*, 1930, LII, 475.
3. M. Tiffeneau. — *B. S. P.*, 1932, XXXIX, 555.
4. Weitz. — *F. M. N.*, 1935, 340.

Le plomb a été introduit dans la métallothérapie du cancer humain par Blair Bell, en 1925.

Ayant reconnu la toxicité des sels solubles de ce métal, il adopta le plomb colloïdal préparé par la méthode de Bredig qui cependant n'est le plus souvent efficace qu'à des doses subtoxiques. Les produits qu'on a, depuis, essayé de lui substituer sont ou plus solubles et plus actifs, mais plus dangereux, ou moins solubles, mais d'une activité plus faible ou même nulle. Enfin, certains auteurs ont préconisé des composés intermédiaires tels que l'oxyde salin ou l'hydrate, insolubles dans l'eau, mais solubilisables par les acides ou les humeurs de l'organisme.

Dans certains cas, on a associé le plomb à des éléments tels que le sélénium, le tellure, le zinc, le bismuth, le cuivre, soit sous forme de mélanges, soit sous forme de composés définis. Enfin, on a préparé des sels complexes de plomb ou ses dérivés organo-métalliques (3).

Les résultats les plus encourageants ont été obtenus avec les formes suivantes :

1° *Plomb colloïdal.*

La préparation de Blair Bell est une suspension colloïdale de plomb gélatineux, stérilisée, renfermant du chlorure de sodium et du chlorure de calcium (1), additionnée ou non d'hyposulfite de sodium qui en augmente la tolérance (4) ; elle contient 0,5 % de métal ; on l'injecte dans les veines à raison de 10 cc. tous les 5 jours ou de 20 cc. tous les 10 jours, en diminuant chaque fois les doses s'il y a lieu et sans dépasser un total de 0 gr. 35 à 0 gr. 40. Certains auteurs adoptent un rythme plus lent, ou bien des solutions très faibles, chaque dose ne dépassant pas 0 gr. 003 de plomb (3). On a utilisé également une solution isotonique glucosée contenant 0 gr. 20 % d'iodure de plomb colloïdal, du séléniure ou du sulfure de plomb colloïdal, de l'albuminate de plomb. Signalons enfin les injections intraveineuses aux doses de 2 à 20 cc., à plusieurs jours d'intervalle, d'une suspension colloïdale de plomb et de mercure, contenant 10 % de chaque métal.

Dans certains cas, le traitement a été continué environ deux ans (4).

2° *Séléniure de plomb.*

Le séléniure de plomb colloïdal a été préconisé en 1928 par Todd et par Dilling ; seul, le premier de ces auteurs admet que ce composé ait une valeur thérapeutique. Les produits qu'il a utilisés ont tous la même teneur en métal : le produit D^2 renferme 75 % de plomb dialysable en grande partie à l'état d'acétate ; le produit D^4S ne renferme que peu de plomb dialysable ; le reste étant uniquement constitué par du séléniure de plomb.

Les malades reçoivent une première injection intraveineuse de 10 à 25 cc., ce qui représente 0 gr. 04 à 0 gr. 10 de Plomb ; on la répète, soit deux fois par semaine, soit tous les 8 jours, soit encore à intervalles plus longs. La quantité totale injectée varie de 0 gr. 30 à 0 gr. 50 en un ou deux mois. Après deux ou trois mois de repos, on fait une nouvelle série de façon à atteindre un total de 1 gr. 20 de métal en 8 à 10 mois.

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POTASSIUM (CHLORURE DE)

A. Ravina. — *P. M.*, 1939, N° 41 , 789.

Le Chlorure de Potassium figurait au Codex de 1884 ; c'est un sel cristallisé en cubes anhydres, fondant à + 770° ; il est très soluble dans l'eau, insoluble dans l'alcool. Ses solutions sont stérilisables à l'autoclave.

Il a été préconisé pour traiter la paralysie périodique ; on pratique une injection intra-veineuse de 50 cm³ de solution à 2 % ; ce volume doit être administré en 10 minutes au moins. Le sujet ressent une soif intense et il se produit quelques extrasystoles qui cessent dès la fin de l'injection. Les troubles de la motilité disparaissent environ 30 minutes après. Il ne faut pas employer de solutions à un taux supérieur à 2 % qui causent une sensation de brûlure locale très intense (Pudenz).

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POTASSIUM (IODURE DE)

1. Lachartre. — *J. P. C.* (7), 1922, XXVI, 134.
2. P. Lebeau et G. Courtois. — 1938, I, 109.

L'iodure de potassium a l'aspect de cristaux cubiques incolores anhydres fondant à + 705°. Il est extrêmement soluble dans l'eau, la glycérine, l'alcool méthylique, moins soluble dans l'alcool absolu et l'acétone. Le sel très pur donne une solution aqueuse neutre, mais en général des traces d'impuretés la rendent faiblement alcaline, ce qui favorise sa conservation (2).

L'iodure sec est inaltérable à l'air et dans le gaz carbonique ; l'iodure humide est stable dans une atmosphère de gaz carbonique, mais jaunit lentement à l'air. Une solution aqueuse au 1/10e reste incolore dans l'air ou dans le gaz carbonique purs mais libère de l'iode en présence d'air contenant du gaz carbonique. La lumière joue dans ces phénomènes un rôle capital car aucune altération ne se produit à l'obscurité (1).

Ses solutions aqueuses sont stérilisables à l'autoclave pendant

20 minutes à + 115° dans des verres rigoureusement exempts de plomb. Elles sont douloureuses à l'injection ; on peut augmenter la tolérance de l'organisme en employant comme dissolvant des solutions sucrées concentrées, par exemple le soluté saccharosé de Lo MONACO à 50 %.

L'iodure de potassium n'est employé en injections hypodermiques qu'en cas d'intolérance gastrique, au cours des dyspnées, contre le saturnisme et le rhumatisme chronique aux doses de 0 gr. 50 à 3 gr. par jour. On l'utilise également comme médicament cardio-vasculaire et contre les actino-mycoses et les accidents graves de la syphilis.

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PROSTIGMINE

1. P. LEBEAU et G. COURTOIS. — *Trait. Pharm. Chim.*, 1938, II, 580.
2. A. PLICHET. — *P. M.*, 1940, Nos 47-48, 543.

La Prostigmine, méthylsulfate du diméthylcarbamate du m. oxyphényltriméthylammonium, est une poudre cristalline blanche, non hygroscopique, stable, très soluble dans l'eau, soluble dans l'alcool. Ses solutions aqueuses sont neutres ou faiblement acides (1). Les solutés injectables de ce médicament nous semblent donc stérilisables à l'autoclave.

Elle est très utile pour combattre la paralysie intestinale post-opératoire, en injections sous-cutanées ou intraveineuses de 1 cm³ contenant 0 gr. 005 de prostigmine dissoute dans le sérum physiologique (1) et pour faciliter l'expulsion des calculs de l'urèthre à condition que le canal sous jacent à l'obstacle soit libre de tout spasme, ou présente même une légère dilatation (O'CONNOR de Chicago). Dans ce cas, on en injecte 0 gr. 0005 et on répète au besoin l'injection 4 fois à 3 ou 4 heures d'intervalle. L'inconvénient de ce procédé est de provoquer une crise de colique néphrétique (2).

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PUS ASEPTIQUE

1. WEITZ. — *F. M. N.*, 1935, 347.

La leucocytothérapie consiste en injections sous-cutanées de

pus aseptique obtenu à partir du liquide collecté dans la cavité pleurale droite du cheval, grâce à un abcès de fixation. Le liquide produit est riche en leucocytes accompagnés de leurs ferments actifs (catalase et péroxydase) ; ces ferments, que l'on peut caractériser encore au bout d'une année, sont considérés comme des témoins de l'activité du pus aseptique.

On le prélève stérilement vers le 5e jour, au moment où l'abcès montre de la fluctuation ; on le recueille dans une solution isotonique phéniquée et on le laisse 10 jours à la glacière en agitant de temps en temps.

Des contrôles bactériologiques sont effectués au moment du prélèvement et à la fin du séjour à la glacière. L'absence de microbes aérobies et anaérobies étant constatée, on dilue le pus dans la proportion de 1 pour 25 dans une solution physiologique phéniquée à 5 ‰ ; on répartit en ampoules de 2 cc. qu'on tyndallise à trois reprises à + 55°. On peut associer le pus aseptique à l'uroformine, à raison de 0 gr. 25 de cette dernière pour une ampoule de 2 cc.

Cette thérapeutique a été appliquée avec succès chez les animaux en 1917, puis elle a été utilisée chez l'homme contre le typhus exanthématique et un grand nombre de maladies infectieuses. Bien qu'on ait parfois employé la voie sous-cutanée, la voie intramusculaire, dans la partie supéro-externe de la fesse est surtout recommandée. On injecte 2 cc. par jour jusqu'à la défervescence ; on peut, chez l'adulte gravement atteint, faire 2 injections par jour.

Chez les nourrissons, la dose est de 1 cc. à continuer chaque jour pendant 7 à 10 jours (1).



PYRIDINE (SALICYLATE DE)

1. Jausion, Schwartz, Pecker et Medioni. — *Com. Soc. Méd. Hôp.*, 1er juin 1934, in *U. P.*, 1935, t. LXXVI, X, p. 3.

En dissolvant dans une molécule-gramme de pyridine, une molécule-gramme d'acide salicylique, les auteurs ont pu obtenir un salicylate de pyridine à l'état cristallisé.

En solution à 4 % ce produit est parfaitement stable. On en injecte tous les deux jours 2 à 10 cc. de solution aqueuse en aug-

mentant de cc. en cc. sans dépasser 10 cc. La vitesse d'injection doit être faible. Les séries sont de 10 à 25 injections. Très bien toléré dans ces conditions, ce produit n'a qu'une légère réaction phlébosclércuse quand on approche du chiffre limite de 30 injections. C'est dans l'uréthrite qu'il se montre le plus actif. On ne peut le mélanger à la gonacrine sans précipitation, mais il est recommandé de l'administrer en alternance avec celle-ci.

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QUINIDINE (SULFATE BASIQUE DE)

1. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, II, 1478.
2. Ch. Aubertin et V. May-Darhovsky. — *P. M.*, 1940, N° 77, 793.

La Quinidine est un alcaloïde isomère de la quinine, et dont le sulfate est cristallisé en prismes allongés, incolores, non efflorescents, solubles dans 110 parties d'eau à + 15°, 15 parties à + 100°, plus soluble dans l'alcool et le chloroforme, insoluble dans l'éther. Son pouvoir rotatoire est $\alpha_D = + 215°$ (1).

Ses solutions sont stérilisables à + 115° pendant 15 minutes, comme celles de quinine.

C'est un dépresseur cardiaque employé contre la crise de tachycardie paroxystique ; on pratique une injection intraveineuse de 0 gr. 25 ou 0,50 de sulfate de quinidine précédée d'une intraveineuse de 1/4 ou 1/2 mmgr. d'ouabaïne qui corrige l'effet dépresseur. L'arrêt de la crise est immédiat (2).

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QUININE ET SES SELS

1. Rouviditch. — *Medicinski Preggled.*, mai 1926, in *U. P.*, 1927, LXVIII, 67.
2. G. Rosenthal. — *Com. Soc. Ther.*, 12 octobre 1927, in *U. P.*, 1928, LXIX, 16.
3. R. Tournay. — *Ann. Labo. Clin.*, 1928, XXV, 113.
4. C. Martinotti. — *Industria Chimica*, 1929, IV, 467, in *J. P. C.* (8), 1931, XIII, 537.
5. Escher et Villequez. — *P. M.*, 1931, n° 25, p. 453.

6. GAUGIER. — *P. M.*, 2 mai 1931, in *U. P.*, 1931, LXXII, 198.
7. A. RAVINA et L. BENZAQUEN. — *P. M.*, 1932, nº 4, p. 73.
8. MUSSO et MOUNET. — *J. P. C.* (8), 1935, XXII, 504.

TABLEAU COMPARATIF DE LA RICHESSE EN QUININE ET DE LA SOLUBILITÉ DES DIVERS SELS

SELS	Quantité de quinine contenue dans 1 gr. de sel.	à + 15° 1 gr. de sel se dissout dans eau :
1° *Basiques* :		
Quinine (hydrate de)	0,857	1.670
Bromhydrate	0,760	44,5
Carbonate (Aristoquine)	0,960	insoluble
Chlorhydrate	0,817	25
Ethyl carbonate (Euquinine)	0,858	peu soluble
Ferrocyanhydrate	0,562	inso uble
Formiate	0,8756	19
Glycérophosphate	0,712	300
Lactate	0,726	12
Salicylate	0,688	900
Sulfate	0,728	570
Tartrate	0,812	peu soluble
Valérianate	0,760	39
2° *Neutres* :		
Quinine (hydrate de)	0,857	1.670
Arséniate	0,774	trsè soluble
Bromhydrate	0,600	6,55
Chlorhydrate	0,733	0,67
Chlorhydrosulfate	0,742	1
Citrate	0,600	peu soluble
Lactate	0,640	3
Salicylate	0,540	—
Dibromosalicylate (Bromochinal)	0,353	peu soluble
Stéarate	0,423	insoluble
Sulfate	0,591	10,9
Tannate (mal défini)	0,205	peu soluble
Tartrate	0,658	assez soluble

Les sels de quinine furent employés pour la première fois sous la forme injectable par un médecin de Smyrne : William SCHACHAND en 1862 et par GOUDAS à Athènes. On utilisait alors le sulfate solubilisé par addition d'acide tartrique. Ce sel fut abandonné ainsi que le bromhydrate et l'on adopta le chlorhydrate neutre, riche en quinine, plus soluble et moins douloureux (à condition de faire des solutions assez diluées) puis le chlorhydrate basique, préconisé par MARTY et mieux toléré encore car il ne présente plus de réaction acide.

La solubilité des sels basiques de quinine (cf. tableau) ne permet pas d'en préparer des solutions suffisamment concentrées dans l'eau pure ; il est maintenant classique, pour obtenir des concentrations suffisantes, de les associer, soit à l'antipyrine, soit à l'uréthane. La formule officinale — chlorhydrate basique-uréthane — est la meilleure, car ce dernier corps augmente plus la solubilité des sels basiques que l'antipyrine et cette augmentation est beaucoup plus sensible pour le chlorhydrate basique que pour tout autre sel, le formiate par exemple (8). Cependant, les solutions de quinine dans le carbonate d'éthyle se troublent à la longue. C. Martinotti a réussi à stabiliser ces solutions en les saturant de gaz carbonique ; l'hydrogène et l'azote conduisent au même résultat. Ainsi préparées ces solutions se conservent indéfiniment (4).

Les sels de quinine présentent certaines incompatibilités, notamment avec les sels alcalins ou avec ceux qui se dissocient sous l'influence de la chaleur en donnant des sels alcalins : carbonates, bicarbonates, sulfates, chlorures, phosphates, glycérophosphates borates, salicylates.

Les solutions de sels de quinine ne sont pas altérées par les rayons ultra-violets, mais elles les arrêtent complètement, aussi ce mode de stérilisation est-il inapplicable ici. D'anciennes pharmacopées (espagnole, italienne, le supplément au Codex de 1895) et certains auteurs (Thomann, Gérard) recommandaient, pour la stérilisation des sels de quinine de ne pas dépasser + 100°, et utilisaient, soit le bain-marie bouillant, soit la vapeur fluente. La stérilisation à + 120° + 130° augmente un peu l'intensité de la coloration naturelle des solutions de quinine, et Duffour a constaté que dans de mauvais verres la coloration, après séjour à l'autoclave, était plus accentuée que dans les verres peu alcalins. L'un de nous n'a pas observé de différences notables avec les différents verres du commerce.

En revanche, à la longue, les solutions de certains sels de quinine, même conservés en ampoules, voyaient leur coloration augmenter légèrement. Il sera plus prudent de les conserver dans des verres colorés ou à l'abri de la lumière. D'autre part, le chauffage à + 115° ne modifie pas de façon appréciable le pouvoir rotatoire des solutions de sulfate neutre et de chlorhydrate neutre à 1 et 5 %. Certains auteurs ont prétendu, au contraire, que la chaleur à + 120° altérant l'état moléculaire des sels de quinine en aug-

mente aussi la causticité et ils préconisent la tyndallisation (Castellani, Grall). Nous pensons que la stérilisation des solutions de sels de quinine peut se faire sans inconvénient notable à + 115° à l'autoclave pendant 15 minutes.

L'indication majeure des sels de quinine est le paludisme ; on les emploie également comme toniques dans la grippe et la pneumonie, et enfin pour scléroser les varices et les trajets fistuleux.

ARSACÉTATE DE QUININE

Il a été employé en suspension à 10 % dans l'huile d'olive. Cette préparation doit être effectuée aseptiquement.

BROMHYDRATE BASIQUE DE QUININE

Le titre de ses solutions d'usage courant varie de 10 à 25 % avec 20 % d'antipyrine. La dose habituelle est de 5 à 10 cc. de solution à 10 %, en injection hypodermique.

BROMHYDRATE NEUTRE DE QUININE

La posologie et le titre des solutions sont les mêmes que pour le précédent ; très soluble dans l'eau, il est inutile de lui associer l'antipyrine ou l'uréthane ; c'est un des sels les plus indiqués pour l'usage hypodermique.

CHLORHYDRATE BASIQUE DE QUININE

Ce sel est le plus employé comme médicament injectable. Il figurait déjà au supplément du Codex de 1895. Il entre dans de nombreuses formules de solutés hypodermiques dont deux figurent au Codex :

a) Chlorhydrate basique de quinine .... 3 gr.
Antipyrine .... 2 gr.
Eau distillée bouillie, q. s. p. .... 10 cc.
1 cc. correspond à 0 g. 30 de sel

b) Chlorhydrate basique de quinine .... 4 gr.
Uréthane.. 2 gr.
Eau distillée, q. s. pour .... 10 cc.
1 cc. correspond à 0 g. 40 de sel

Dalimier préconise un soluté isotonique sans uréthane, ni antipyrine :

Chlorhydrate basique de quinine	0 gr. 40
Chlorure de sodium	0 gr. 437
Eau distillée, q. s. pour	10 cc.

pour stériliser le paludisme au début, injecter 75 cc. (soit 3 gr. en deux fois matin et soir.

Escher et Villequez prescrivent, dans les formes graves de paludisme, les injections intraveineuses : la quantité totale de quinine à injecter doit être voisine de 2 gr. sinon supérieure ; la dilution sera très étendue et l'injection très lente. Pour cela, on se servira d'une ampoule de 250 cc. de sérum physiologique tiédi, en ajoutant le contenu d'une ampoule de quinine à 0 gr. 50 et une ampoule de 1 cc. d'adrénaline au 1/1000e. L'injection doit passer en une demi-heure environ, la vitesse du débit étant réglée par le robinet placé à l'extrémité du tube de caoutchouc reliant l'aiguille à l'ampoule. Cette dernière est placée à environ 50 cm. au-dessus du point d'impact. Une telle injection doit être renouvelée deux à trois fois par jour suivant les cas jusqu'à ce que la dose injectée soit égale ou supérieure à 2 gr.

Comme traitement usuel du paludisme, Escher et Villequez font des injections intraveineuses de 0 gr. 40 à 0 gr. 50 de chlorhydrate de quinine, par séries de cinq à six quotidiennes ou espacées de deux jours. Pour éviter la sclérose des veines, la quinine est diluée extemporanément dans 10 cc. d'eau distillée. On augmente encore la dilution en faisant barboter la solution dans la seringue avec 10 cc. de sang veineux environ. L'injection doit durer au minimum cinq minutes (5).

Rouviditch signale d'heureux effets, dans le traitement de la pneumonie franche lobaire aiguë, obtenus avec la solution ci-dessous, employés en injections intramusculaires et sous-cutanées (1) :

Adrénaline	0 gr. 00025
Chlorhydrate basique de quinine	0 gr. 40 à 0 gr. 80
Uréthane	0 gr. 20 à 0 gr. 40
Solution de chlorure de sodium à 7 °/oo, q. s. pour	5 cc.

Les sels de quinine en général, et le chlorhydrate en particulier, sclérosent les veines d'où leur emploi contre les varices. On utilise habituellement la solution de quinine-uréthane du Codex. Cepen-

dant TOURNAY préfère commencer le traitement par une solution moins concentrée :

Chlorhydrate de quinine	0 gr. 20
Uréthane	0 gr. 10
Eau distillée	3 cc.

On injecte seulement au début 0 cc. 25 de solution forte ou 0 cc. 50 de solution faible ; puis selon la réaction obtenue, 0 cc. 75 ou même 1 cc. de solution forte ; enfin, on pratiquera d'autres injections en d'autres régions, sans dépasser 0 gr. 40 de quinine par séance. Toutefois, l'auteur emploie plus volontiers le salicylate de soude qui est moins escarrotique, donne des réactions locales moins vives et exige moins fréquemment une immobilisation relative (3).

GAUGIER et ses collaborateurs indiquent une solution encore plus diluée :

Chlorhydrate de quinine	10 gr.
Uréthane	10 gr.
Eau distillée	100 cc.

en ampoules de 5 cc.

Ils n'utilisent qu'exceptionnellement des ampoules de concentration plus forte (15 %) (6).

RAVINA et BENZAQUEN traitent les fistules pathologiques et congénitales par la méthode de Restrepo qui consiste à injecter dans le trajet fistuleux et à l'y maintenir cinq minutes environ la solution suivante :

Chlorhydrate basique de quinine	0 gr. 40
Uréthane	0 gr. 20
Eau distillée, q. s pour	3 cc.

Il arrive fréquemment qu'une partie de la quinine soit précipitée sous forme de cristaux ; il suffit, dans ce cas, de placer les ampoules dans l'eau tiède avant usage pour voir la dissolution se faire. Chez les malades pusillanimes, on pourra pratiquer auparavant une injection de quelques gouttes de Novocaïne (7).

CHLORHYDRATE NEUTRE DE QUININE

Il s'emploie habituellement en solution glucosée pour éviter l'altération de la paroi au cours des injections intraveineuses :

Chlorhydrate neutre de quinine	0 gr. 30
Uréthane..	0 gr. 30
Solution glucosée à 30 %, q. s. pour	10 cc.

pour une ampoule à injecter lentement.

Koucher (de Sarator) associe le bleu de méthylène au chlorhydrate neutre de quinine pour rendre ce dernier moins douloureux : Dissoudre à chaud le bichlorhydrate de quinine dans de l'eau distillée (1 pour 2). Ajouter à la solution encore chaude du bleu de méthylène dissous dans quelques gouttes d'eau pour obtenir une solution contenant 3 % de bleu de méthylène. Filtrer, stériliser. La dose courante est de 1 cc. injecté dans le tissu sous-cutané de l'abdomen ou du dos (et non pas des bras où se produirait souvent une nécrose du tégument).

CHLORHYDROSULFATE DE QUININE

C'est un sel mal défini et douloureux à l'injection. On l'a employé en solution à 25 %.

FORMIATE BASIQUE DE QUININE

C'est le plus riche en quinine de tous les sels. Le produit officinal cristallise avec une molécule d'eau et titre plus de 80 % de base. On en injecte par voie hypodermique 5 ou 10 cc. de solution à 5 %. Il est indolore.

LACTATE BASIQUE ET LACTATE NEUTRE DE QUININE

Ces sels ont été préparés par Vigier ; ils sont très solubles dans l'eau et indolores. Le lactate neutre s'emploie en soluté à 25 %, le lactate basique, en soluté à 8 %, tous deux dans l'eau distillée pure, sans antipyrine ni uréthane.

OLÉATE DE QUININE

Le soluté huileux d'oléate de quinine, qui n'est plus employé aujourd'hui, avait pour formule :

Quinine base	10 gr.
Acide oléique	30 gr.
Huile d'olive stérilisée, q. s. pour	100 cc.

on stérilisait par tyndallisation à 60°

STOVARSOLATE DE QUININE

on stérilisait par tyndallisation à + 60°.

Il a été découvert et étudié par FOURNEAU et peut-être injecté dans les veines sous forme de solution de ROSENTHAL. Cette solution contient de l'uréthane pour solubiliser le sel de quinine et du glucose pour permettre à la veine de la tolérer.

Stovarsolate de quinine	0 gr. 25
Uréthane	0 gr. 75
Eau glucosée à 30 %, q. s. pour	10 cc.

en ampoules de 5 cc.

Ce soluté est resté clair et limpide en ampoules pendant trois mois.

Citons pour mémoire, le sulfate basique de quinine en solution à 30 % avec 20 % d'antipyrine, le sulfate neutre en solution à 20 %, et le valérianate basique, actuellement abandonnés car leur injection est douloureuse.

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QUININE — URÉE

1. LEBEAU et COURTOIS. — *Trait. Pharm. Chim.*, 1938, II, 1458.
2. R. BENSAUDE, A. CAIN et J. A. LIÈVRE. — *U. P.*, 1930, LXXI, 106.
3. H. VIGNES. — *Prog. Méd.*, 13 janvier 1934, in *U. P.*, 1934, LXXV, 162.
4. L. BLAVIER. — *Pres. Méd.*, 2 mars 1934, in *U. P.*, 1934, LXXV 328.

CHLORHYDRATE DOUBLE DE QUININE-URÉE

Le chlorhydrate double de quinine et d'urée est un corps cristallisé incolore, soluble dans son poids d'eau, en donnant une so-

lution aqueuse acide, stable à l'ébullition. On le prépare en dissolvant à chaud 40 parties de chlorhydrate basique de quinine et 6 parties d'urée dans 25 parties d'acide chlorhydrique dilué de densité 1,07. Le sel cristallise lentement par refroidissement (1).

Ses solutions injectables sont stérilisables à + 100° pendant 30 minutes, ou mieux par trois chauffages semblables.

1° En solutions aqueuses étendues (0 gr. 25 à 1 gr. %), c'est un remarquable succédané de la quinine, presque indolore par voie intramusculaire. Les doses s'échelonnent de 0 gr. 30 à 0 gr. 60. Ces mêmes solutions injectées sous la peau conviennent comme anesthésique local au cours des petites opérations et pour combattre le prurit vulvaire (3).

2° Les solutions plus concentrées (5 %) sont utilisées pour scléroser les hémorroïdes (une injection de 3 à 5 cc. par semaine au pied même de l'hémorroïde pendant cinq à six semaines) (1) et pour traiter les fissures anales ; on emploie alors une aiguille très fine à biseau court et on injecte immédiatement sous la muqueuse 0 cc. 25 de solution. Le malade ressent une douleur très vive qui cesse immédiatement. Si c'est nécessaire, on renouvellera les injections à raison de deux par semaine, sans jamais dépasser six.

CHLORHYDROLACTATE DE QUININE-URÉE

Le chlorhydrolactate de quinine et d'urée est indiqué dans le traitement des hydrocèles ; après ponction, on injecte 3 cc. de solution à 25 % pour une hydrocèle de 75 cc. Une seule injection est en général suffisante (4).

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R

ROSE BENGALE

1. P. Bruère. — *Arch. Méd. Pharm. Milit.*, février 1928, in *U. P.*, 1928, LXIX, 230.
2. R. Weitz. — *F. M. N.*, 1935, 364.

Le Rose Bengale, dérivé disodique ou dipotassique de la diiodotétrachlorofluorescéine, a été proposé par Kerr, Delprat et

Epstein, pour l'exploration fonctionnelle du foie ; il est moins toxique et moins coûteux que les autres substances employées au même usage. Cette méthode est basée sur l'élimination plus ou moins rapide du colorant que l'on recherche au bout d'un temps déterminé dans le sérum sanguin par colorimétrie.

C'est une matière colorante rose bleuâtre qui donne une solution aqueuse rouge cerise.

Selon N. Fiessinger et Walter, on prépare des ampoules de 10 cc. d'une solution à 0 gr. 015 de rose bengale par cc. de sérum physiologique. On les stérilise en les laissant 30 minutes dans la vapeur fluente. On fait une injection intraveineuse de 1 cc. pour 10 kgr. de poids corporel et on compare la teinte du plasma prélevé avant l'injection à celle du plasma recueilli 45 minutes après (1), (2).



ROUGE CONGO

1. R. Cestan, M. Sendrail et R. Labro. — *Com. Soc. Méd. Hôp.*, 16 juin 1933, in *U. P.*, 1933, LXXV, 334.
2. L. Nobili. — *Bol. Chim. Farm.*, 1937, LXXVI, 177.
3. Fiessly. — *Com. Soc. de Méd. de Paris*, 27 décembre 1937, in *P. M.*, 1938, N° 6, 109.
4. J. Nuytten et J. Merlen. — *Com. Soc. Méd. du Nord*, 25 novembre 1938, in *P. M.*, 1939, N° 9, 166.
5. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, II, 1199.
6. O. Lambret. — *Com. Ac. Chir.*, 13 décembre 1939, in *P. M.*, 1940, Nos 3-4, 34.

Le Rouge Congo, poudre rouge foncé, soluble dans l'eau est un colorant azoïque ; c'est le sel de sodium de la combinaison benzidine-acide-amino-naphtalène sulfonique (5). On l'a d'abord appliqué au diagnostic de l'amylose rénale (1).

Il a depuis, été employé en thérapeutique, et selon Nobili la solution injectable pour cet usage doit être préparée avec 1 % de colorant très pur et 9,85 % de saccharose sans addition de chlorure de sodium ni de sels tampons ; on la stérilisera à + 100° pendant 30 minutes (2).

Par voie intraveineuse, à la dose de 5 à 10 cm³ elle sert au traitement de l'hémophilie, de la maladie de Werlhoff (purpura ecchymotique), des hémorragies des ictériques, et comme préventif des hémorragies avant les prostatectomies (3) et les autres interventions. Elle agirait dans ce cas en améliorant les temps de sai-

gnement et de coagulation. Elle donne également de bons résultats dans les hémoptysies (6).

Une solution beaucoup plus concentrée a été utilisée comme traitement des hémorragies graves des cancéreux, notamment en cas de néoplasme du col utérin, on pratique 1 ou 2 injections intraveineuses de 10 à 20 cc. de solution à 20 % de rouge Congo Merck (4).

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S

SACCHAROSE

Synonyme : **Sucre de betterave. — Sucre de canne. — Sucre blanc.**

1. Jungfleisch. — *Traité élém. de chimie organique*, I, 645.
2. Lo Monaco. — *Injections de saccharose dans le traitement de la tuberculose.* Paris, Maloine, éd.
3. Cousin et Fagou. — *Bul. Soc. Pharm.*, Bordeaux, 1937, LXXV, 161.
4. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, I, 1122.

Le saccharose se présente en prismes clinorhombiques anhydres, incolores, inaltérables, fondant entre + 160° et + 180°. Sa solubilité dans l'eau est très grande :

1 partie dans 0,5 partie d'eau à + 15°.
1 partie dans 0,2 partie d'eau à + 100°.
1 partie dans 0,1 partie d'eau à + 130°.

elle est encore augmentée par les azotates et carbonates alcalins et par le chlorure de calcium. Sa solubilité dans l'alcool diminue avec le degré alcoolique ; elle est nulle dans l'alcool absolu à froid, la glycérine et les autres solvants. Le saccharose est dextrogyre α_D = + 66°54 à + 15°, en solution de 5 à 30 % cm³.

Il n'est pas directement réducteur. L'eau à l'ébullition le dédouble en glucose et lévulose, tous deux réducteurs ; le pouvoir rotatoire devient alors lévogyre, d'où le nom d'interversion donné à l'opération et de sucre interverti à son produit. L'action de l'acide chlorhydrique étendu est plus rapide et plus complète que celle de l'eau pure. Le sciage et la pulvérisation qui s'accompagnent d'un dégagement de chaleur intervertissent aussi le saccharose. Il est dédoublé notamment par l'invertine de la levure de bière et

c'est alors seulement qu'il devient fermentescible. Sa constitution est celle d'un éther mixte du *d* - glucose α (à noyau pyranique) et du *d* - fructose (sous sa forme instable) (4).

Il ne doit pas renfermer plus de 1 p. 1.000 d'eau.

Au cours de la stérilisation des solutions à + 100°, même en présence de traces d'alcalis, le sucre est interverti peu à peu. L'action est déjà plus sensible à + 120° ; elle correspond alors à la destruction par heure de 0 gr. 28 sur 100 gr. dissous dans 100 gr. d'eau ; à + 130° cette destruction atteint 1 gr. 20 (1). Nous venons de voir que la présence d'acides, même extrêmement dilués, (à p. 1000) exagère considérablement ce phénomène.

Lesure a pu observer une très légère interversion dans les solutions de saccharose stérilisées sous pression, à + 120° dans les verres ordinaires du commerce. Comme elles doivent être injectées sous la peau ou dans les veines à doses massives, leur stérilisation devra être aussi rigoureuse que possible, c'est-à-dire qu'on l'effectuera à + 115° à l'autoclave, au risque de dédoubler une très petite quantité de sucre.

Le soluté isotonique de Fleig contient 103 gr. de saccharose par litre, d'autres auteurs ont proposé les chiffres de 90 gr. (Jeanbrau) et de 92 gr. 50 (Lyon). Il est indiqué à doses massives en injections sous-cutanées, ou mieux intraveineuses, dans les diverses infections pour augmenter la diurèse, désintoxiquer l'organisme et combattre le collapsus, avec cet avantage sur les solutés salins, de pouvoir être utilisé en cas de néphrite ou d'insuffisance rénale.

L'hydrolyse du saccharose par les acides à chaud a été mise à profit pour préparer une solution injectable de sucre interverti ; en effet, dans certaines circonstances, on n'a à sa disposition que du glucose industriel qui contient des impuretés, en particulier du plomb et de l'arsenic. Guerbet, pendant la guerre de 1914-1918, intervertissait le saccharose par l'acide phosphorique, qu'il éliminait par le carbonate de chaux. Le soluté ainsi préparé est très notablement acide : son *p*H est de 5,6 à 5,8 au lieu de 7. Cousin et Fagou proposent les modes opératoires suivants :

1° Pour le sérum isotonique : à 250 cm^3 de solution de saccharose à 380 gr. par litre, ajouter 3 cm^3 de solution à 10 % d'acide phosphorique officinal. Faire bouillir 30 minutes sous réfrigérant ascendant. Ajouter 20 cm^3 de soude N/10. Compléter à 2 litres. Répartir en ampoules et stériliser à + 110° pendant 20 minutes.

2° Pour le sérum hypertonique, prendre 300 cm³ de solution de saccharose à 380 gr. par litre, ajouter 3,5 cm³ de solution à 10 % d'acide phosphorique officinal et faire bouillir comme précédemment. Ajouter 23 cm³ de soude N/10 et compléter à 400 cm³ (3).

Le saccharose a été employé comme antisécrétoire et hémostatique dans le traitement de la tuberculose par Lo MONACO. On pratique des injections intramusculaires de la formule suivante :

Saccharose pur	5 gr.
Stovaïne	0 gr. 03
Eau distillée, q. s. pour	10 ou 20 cm³

A stériliser par tyndallisation (à cause de la stovaïne) (2).

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SANG

(Autohémothérapie)

1. P. ABRAMI, Jean DALSACE et R. WALLICH. — *P. M.*, 1937, n° 38, 713.
2. E. MAY, Mme LOGEAIS et R. TIFFENEAU. — *Com. Soc. Méd. Hôp.*, 13 mai 1938, in *U. P.*, 1938, LXXIX, 301.
3. J. LE CALVÉ. — *P. M.*, 1938, n° 49, 956.
4. R. LEVEN. — *Com. Soc. Thér.*, 8 février 1939, in *J. P. C.* (8), 1939, XXX, 46.
5. J. CARLES. — *Précis de Thérapeutique appliquée*, 2e éd., Paris, 1939. Doin, éd.

L'autohémothérapie est une thérapeutique qui consiste à prélever aseptiquement une certaine quantité de sang au malade, par ponction veineuse au pli du coude, et à la lui injecter immédiatement dans le tissu cellulaire de la cuisse, par exemple. Elle agit comme agent désensibilisant et comme médication de choc.

Elle est indiquée au cours des complications de la grippe (congestion pulmonaire, pneumonie, bronchopneumonie) ; la dose est de 5 cc. à renouveler 3 ou 4 fois tous les jours ou tous les deux jours. Elle a été conseillée par RAVAUT pour modifier le terrain, combattre le défaut d'effort défensif et la résistance du syphilitique à l'action des médicaments spécifiques. Deux à quatre autohémo-injections donnent de bons résultats contre le zona. C'est aussi un bon traitement désensibilisant de la goutte. Des doses de 5 à 20 cc. sont employées pour leur action coagulante dans les syndromes hémorragiques ; — contre l'asthme des foins et les autres formes de l'asthme anaphylactique, les doses varient de 10 à 20 cc. tous les

jours ou tous les deux jours pendant une courte période. L'autohémothérapie réussit quelquefois contre la migraine (5) et aussi contre l'urticaire.

Un certain nombre d'auteurs ont préconisé d'intéressantes modifications de la méthode classique et en ont donné de nouvelles indications ; c'est ainsi qu'on peut éviter les accidents d'intolérance au cacodylate de soude, au sérum antidiphtérique et aux autres sérums thérapeutiques en les mélangeant, avant l'injection, à une certaine quantité de sang du malade (4). Il en est de même pour les sels d'or, de calcium et certaines hormones. On a pu guérir des crises hépatiques menstruelles très douloureuses au moyen d'injections de sang menstruel (2). ABRAMI et ses collaborateurs pratiquent l'autohémothérapie intraveineuse après hétérogénéisation du sang par contact avec de l'eau distillée, placée au préalable dans la seringue où l'on recueille le sang ; on gradue l'hétérogénéisation en faisant varier la quantité d'eau et la durée de contact ; en général, il suffit de 2 à 3 cc. d'eau, laissés en contact avec 10 cc. de sang pendant 20 secondes, non compris les temps d'aspiration et d'injection. Il faut espacer les injections de 4 à 5 jours ; ce procédé est indiqué comme traitement de la stérilité, de la dysménorrhée de la puberté, des troubles de la ménopause (1). Enfin, on a traité la douleur rhumatismale par l'autohémothérapie intradermique. Le matériel nécessaire comprend une seringue de 20 cc., une longue aiguille pour l'injection profonde, une aiguille de 9/10 de mm. pour la prise de sang et une de 7/10 de mm. à biseau court pour les intradermiques, et enfin une ampoule de solution de citrate de soude à 10 % ; on repère d'abord les points douloureux et on désinfecte la peau, on met en place la longue aiguille pour injections intramusculaires dans la région rétro-ou sus-trochantérienne, on aspire le citrate de soude dans la seringue, et on prélève 20 cc. de sang que l'on réinjecte à raison de quelques gouttes dans les couches superficielles du derme au-dessus et aux alentours des points douloureux, le reste du sang est injecté dans la fesse. On renouvellera l'opération tous les 4 jours autant de fois qu'il convient (3).



SANG CONSERVÉ

1. JULLIEN-VIEROZ. — *Thèse Doct. Méd.*, Bordeaux, 1934.
2. G. JEANNENEY, SERVANTIE et JULLIEN-VIEROZ. — *Journ. de Méd. de Bordeaux*, 14 mai 1934.
3. G. JEANNENEY. — *Prog. Med.*, 14 nov. 1936, nº 46, p. 1761.
4. M. FOURESTIER et J. P. PAILLAS. — *Ann. Med. Chir.*, 1938, t. III, 167 et 207.
5. G. JEANNENEY et RINGENBACH. — *Com. Ac. Chir.*, 15 fév. 1939, in *Pres. Méd.*, 25 fév. 1939, nº 16, 312.
6. A. GRIMBERG. — *P. M.*, 1939, nº 32, 611.
7. A. GRIMBERG. — *P. M.*, 1939, nº 38, 740.
8. C. JARVIS. — *P. M.*, 1939, nº 73, p. 1359.
9. JAME et GRIMBERG. — *P. M.*, 1939, nºs 85-86, 1521.
10. A. BÉCARD. — *P. M.*, 1939, nºs 97-98, 1681.
11. A. HUSTIN. — *Com. Ac. Chir.*, 6 déc. 1939.
12. ANONYME. — *P. M.*, 1939, nºs 95-96, p. 1668.
13. Ed. BENHAMOU et C. MERCIER. — *P. M.*, 1940, nºs 6-7, 66.
14. F. RONALD EDWARDS, J. KAY et T. B. DAVIE. — *Brit. Med. Journ.*, nº 4131, 377.
15. PLISSON. — *P. M.*, 1940, nºs 29-30, p. 337.
16. S. LEVINSON, F. NEUWLET et H. NECHELES. — *Journ. Am. Méd. Assoc.*, 1940, t. CXIV, 455.
17. A. TZANCK, M. SUREAU et L. de MONTIS. — *Com. Soc. Méd. Hôp.*, 23 fév. 1940.
18. A. TZANCK, M. SUREAU et C. PITTALUNGA. — *Com. Soc. Biol.*, 20 avril 1940.
19. A. BÉCART et B. PHILIPPE. — *P. M.*, 1940, nºs 47-48, 535.
20. A. PLICHET. — *P. M.*, 1940, nºs 60-61, p. 654.

La transfusion de sang conservé ne prétend pas supplanter la transfusion de sang frais et le mot de TZANCK reste toujours vrai : « La meilleure manière de conserver le sang est de le conserver dans les veines du donneur ; » cependant le sang conservé rend d'inappréciables services en temps de guerre ou lorsqu'un vaste territoire est desservi par un seul médecin. Cette méthode est entrée dans la pratique courante depuis 1918 et a été perfectionnée au cours des dernières années.

Le sang conservé provient exclusivement de donneurs vivants du groupe IV (O) réunis à proximité du centre de prélèvement pour contrôle et examen. Autre source : le sang de cadavre prélevé à la jugulaire 6 heures au plus après la mort violente, subite de sujets absolument sains (méthode de JUDINE, de Moscou.). Le sang est mélangé au 1/3 avec du citrate de soude à 6 $^{o}/_{oo}$ ou avec du sérum I. H. T. Il se conserve 20 jours. Cette méthode n'est pas employée en raison des accidents qu'elle a provoqués (2 morts et

3 ictères pour 100 transfusions.) On a également proposé d'employer le sang placentaire (6).

Deux jours après la récolte la séparation entre globules et plasma est complète, ce dernier est clair, ambré et transparent, puis devient rosé lorsque l'hémolyse commence ; à ce moment il devient inutilisable (6). Le sang conservé ne présente pas de variation notable de sa capacité respiratoire, la résistance globulaire diminue lentement, le groupe sanguin reste le même (2). Mais il subit néanmoins certaines modifications cytologiques et chimiques d'autant plus rapides que la température est plus élevée : lyse précoce des globules blancs, altérations morphologiques, agglutination et diminution du nombre des hématies, puis hémolyse, agglutination des plaquettes, enfin et surtout augmentation du potassium plasmatique aux dépens du potassium globulaire.

Tous ces facteurs, générateurs d'accidents, limitent les délais d'utilisation à 15 jours selon Bécart et Philippe, à 2 ou 3 pour les auteurs anglo-saxons (19), pour Bagdasaroff de 10 à 34 jours suivant les anticoagulants employés, pour Jeanneney et ses collaborateurs à 26 jours (5). Cependant on peut admettre que le sang conservé et citraté a jusqu'au 10e jour environ, en dehors de la lyse très précoce des globules blancs, sensiblement les caractères morphologiques et physiologiques du sang prélevé dans les veines d'un donneur en ce qui concerne les globules rouges et les plaquettes sanguines (13).

Divers anticoagulants ont été proposés ; ils devront être en tous cas chimiquement purs et l'eau bi-ou tri-distillée.

1° Sérum de l'Institut d'Hématologie et de Transfusion de Moscou (sérum I. H. T.) :

Citrate de soude tribasique à $11H^2O$	5 gr. 20
Chlorure de sodium	7 gr.
Chlorure de potassium	0 gr. 20
Sulfate de magnésie anhydre	0 gr. 04
Eau distillée q. s. pour	1.000 cc.

On le mélange à parties égales avec le sang au moment de la ponction veineuse (6).

2° Citrate de soude tribasique à 11 H^2O, 4 gr. pour 1.000 cc. de sang, soit 10 cc. de solution à 10 % pour 250 cc. de sang (3). La faible toxicité de ce sel et les quelques accidents bénins qu'il provoque ne sauraient en limiter l'emploi. Le sérum physiologique citraté n'est pas un bon agent de conservation (6).

3° Certains auteurs russes ont constaté que l'addition de glucose au sérum I. H. T. allonge les délais de conservation de 25 à 30 jours. Il semble que cette adjonction de glucose compense la glycolyse habituelle due aux nécessités vitales des éléments figurés et prolonge ainsi leur vie.

4° Selon HARRINGTON et MILES, la meilleure méthode de conservation du sang est de le diluer avec la moitié de son volume de solution contenant pour 100 cc. :

Citrate tribasique de soude à $11H^2O$..............	1 gr. 05
Glucose..	0 gr. 30
Sulfanilamide	0 gr. 05

et de le garder à la température de 2 à 4°. La durée de conservation est de 15 jours au moins. L'addition de sulfanilamide n'altère en rien les propriétés du sang conservé et lui confère un puissant pouvoir bactéricide vis-à-vis du streptocoque (8).

5° L'héparine, anticoagulant naturel, particulièrement abondant dans le foie, les muscles et les poumons serait un complexe polyacide de la sulfochondroïtine ; mais la conservation du sang par ce procédé n'est pas au point à cause de son prix élevé ; d'autres ont été essayés sans recevoir d'applications pratiques : emploi du sel sodique d'un acide di-sulfurique de la cellulose, du sel potassique de l'acide poly-vinylsulfurique, de la cinantrine, du sulfarsénol à 1 gr. par litre, du formol à 0,55 pour 100, du sulfoxylate de sodium (6).

On n'obtient de bons résultats que si l'on observe scrupuleusement les règles suivantes :

1° L'aseptie doit être aussi absolue que possible et plus minutieuse encore que celle qu'observent les chirurgiens, car si des germes même non pathogènes viennent infecter le sang que l'on recueille, aucun processus de phagocytose ne vient entraver leur développement qui rend le sang inutilisable (3), (6). Certains auteurs ont proposé d'ajouter des antiseptiques divers, mais aucun résultat favorable n'a été enregistré sauf peut-être avec le tricrésol à 3 % de Sköld (6).

2° le mélange du sang avec l'anticoagulant doit être absolument intime de façon à éviter le moindre caillot dont la formation s'accompagne de produits toxiques non éliminés par filtration (3), (6).

3° On évitera avec soin de traumatiser le sang conservé en pros-

crivant l'emploi d'agitateurs et en manipulant les récipients avec soin (6).

4° Le sang sera conservé à une température comprise entre + 1° et + 4°.

5° Le récipient ne doit pas présenter d'angles vifs, doit être en verre parfaitement neutre (Pyrex) d'une propreté absolue, complètement rempli et hermétiquement clos. Une étiquette indiquera la date du prélèvement et les renseignements concernant le donneur (6).

Le sang est recueilli dans un flacon contenant une partie de l'anticoagulant, l'autre partie se mélangeant au sang au fur et à mesure de la récolte, au sortir même de la veine du donneur. JEANNENEY a codifié comme suit les règles du nettoyage des instruments :

1° Lavage à l'eau courante pendant 10 minutes.

2° Rinçage à l'alcool absolu.

3° Lavage à l'eau bi-distillée pendant 10 minutes.

4° Ebullition d'eau bi-distillée dans le flacon pendant 10 minutes.

5° Séchage.

6° Rinçage du flacon avec une petite quantité de sérum I. H. T. ou de solution citratée à 6 % avant de mettre définitivement l'anticoagulant dans le flacon.

7° Bouchage avec un bouchon nettoyé comme le flacon après avoir mis dans ce dernier la quantité suffisante d'anticoagulant.

8° Stérilisation du flacon bouché durant 15 minutes à l'autoclave à 120°.

Les aiguilles à prise de sang seront de gros calibre, à petit biseau et paraffinées avant l'opération, de même que les tubes en caoutchouc (5).

GRIMBERG a proposé pour récolter le sang l'appareil ci-dessous : le sang est aspiré au moyen d'un appareil de Jouvelet dans le flacon collecteur au fond duquel se trouve une partie de l'anticoagulant, l'autre se trouvant mélangée goutte à goutte au passage, le plus près possible du donneur. Un mélangeur est intercalé entre le goutte à goutte et le collecteur : c'est une petite boule de verre qui reçoit le sang et l'anticoagulant, et de laquelle le mélange sort par un siphon ; ce dispositif évite tout traumatisme du sang. Le collecteur est obturé, de préférence au bouchon de caoutchouc à deux tubulures, par un bouchon en verre creux à deux tubulures

latérales qui en prolongent la partie supérieure, horizontale. Ce dispositif peut être stérilisé parfaitement et facilement et permet en outre un remplissage total sans bulle d'air (fig. 17) (7).

Le sang doit-il être filtré avant l'usage ? Selon HUSTIN ce n'est pas systématiquement nécessaire : 250 litres transfusés sans filtration n'ont causé aucun accident mais la technique suivie pour la récolte assurait dès l'aiguille un mélange intime du sang et du

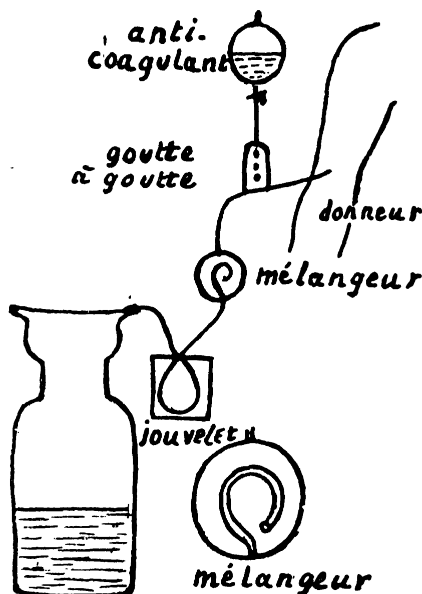


FIG. 17.

citrate (11). Cependant la filtration est une précaution dont on ne peut facilement se dispenser car il y a dans le sang conservé des micro-caillots qui d'après TZANCK et ses collaborateurs se forment à partir des premières heures dans le sédiment flottant au-dessus de la masse globulaire et sont constitués par quelques leucocytes et par des plaquettes (18). JAME et GRIMBERG ont mis au point le filtre « J. G. » qui réunit filtre et goutte à goutte en une seule ampoule : (fig. 18) « Un entonnoir renversé est placé à l'intérieur de l'ampoule, son ouverture a un diamètre de 10 mm. ; par l'orifice supérieur on introduit un carré de gaze de 10 × 10 cm. que l'on tasse sur tout le pourtour de l'entonnoir ; l'ouverture du filtre se trouve ainsi obturée par plusieurs épaisseurs de gaze. Grâce à ce

dispositif les caillots sont retenus sur le pourtour et ne peuvent pas colmater l'ouverture centrale. Le filtre J. G. est intercalé entre l'ampoule de sang et le receveur (9).

La technique de transfusion est la suivante :

1° Chauffer le ballon à 39° au bain-marie.

2° Mélanger globules et plasma.

3° Réunir le ballon de sang et le filtre J. G. au moyen d'un tube de caoutchouc stérile de 20 cm. de long.

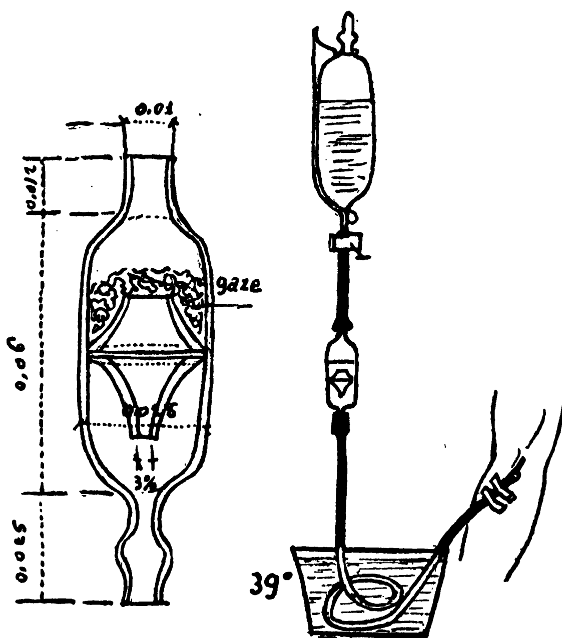


Fig. 18.

4° Poser un garrot sur le bras du receveur et introduire l'aiguille dans la veine après antisepsie de la peau à la teinture d'iode.

5° Réunir le filtre J. G. et l'aiguille au moyen d'un tube de caoutchouc stérile de 2 mètres de long dont la partie voisine du transfusé est plongée dans de l'eau à 39°.

6° Régler le débit (6), (9).

Pour éviter l'hémolyse Plichet prescrit de ne pas réchauffer le sang avant l'injection car même le sang à 5° injecté lentement est très rapidement et très suffisamment réchauffé par l'atmosphère ambiante entre 15° et 25°. Aucun accident post-transfusionnel n'a

été constaté dans ces conditions sur 568 cas, par des auteurs américains (20).

Lorsque les circonstances l'exigent le sang conservé peut être transfusé avec la même rapidité et aux mêmes doses que le sang frais (jusqu'à 2 litres au rythme de 1 litre en 15 à 20 minutes), mais dans la pratique ordinaire on fera des transfusions lentes (15 à 20 minutes par ampoules de 250 cc. (17). En tous cas, les 30 premiers cc. doivent être injectés très lentement en observant les réactions du malade (6).

Selon BÉCART les transfusions rythmiques réalisées au moyen d'un appareil dont la description a été donnée (12), ont une supériorité manifeste sur les transfusions continues ; le transfuseur de BÉCART est un véritable cœur artificiel, mû électriquement ou à la main, donnant 60 pulsations à la minute, le débit passant à chacune d'elles par un minimum et un maximum sans s'annuler. Cet appareil réalise les mêmes conditions que l'irrigation sanguine et on obtient ainsi une action plus rapide avec des doses moindres. Il est applicable au sang frais et à ses succédanés (10).

En effet, les altérations du sang pendant sa conservation sont telles que certains ont proposé de le remplacer par le plasma pour lequel en outre le facteur du groupe sanguin ne joue pas, d'où la possibilité de l'administrer juste après l'accident sans perte de temps et d'éviter ainsi le schock secondaire (16). La méthode ideale semble être l'utilisation du *plasma à plaquettes* : on recueille stérilement le sang citraté à 0,4 % dans une allonge présentant un étranglement entre le 1/3 moyen et le 1/3 supérieur au niveau de la séparation prévue entre le plasma et les globules ; ce plasma recueilli au bout de 7 heures est purifié dans une seconde allonge tubulaire pendant 12 heures puis mis en ampoules. *Le plasma pur* est recueilli par centrifugation lente pendant 1 heure ; il ne contient aucun élément figuré. Sa conservation est indéfinie même en dehors de la glacière. On peut procéder à la sulfamidation de l'un ou l'autre à raison de 0,03 ou 0,04 de sulfanilamide pour 100 cc., taux optimum. Le plasma est ainsi stabilisé et son pouvoir bactéricide augmenté ce qui est d'un gros intérêt chez le blessé pour prévenir l'infection (19).

Certains auteurs anglais emploient le plasma sec qui s'obtient très facilement à bon marché et se conserve indéfiniment. C'est une poudre jaune pâle ou orangé dont on dissout 20 gr. dans 250 cc. d'eau (ce qui correspond en protéines à 57 cc. de sang) ou

bien encore 20 gr. dans 500 cc. de solution de glucose à 5 %. Les albumines sont identiques à celles du sang primitif. Le sang idéal pour le préparer est celui du groupe AB (que l'on peut obtenir en mélangeant des sangs des groupes A et B ; le sang du groupe O (IV) ne convient pas. On n'a jamais d'accidents avec le plasma du groupe AB ; avec les autres il ne faut pas dépasser 500 gr. (14).

La valeur de la méthode de transfusion de sang conservé a été fort bien résumée dans les conclusions proposées par le médecin général PLISSON à l'assemblée mensuelle des médecins et chirurgiens consultants d'armée de décembre 1939 : « Le sang frais stabilisé est préférable au sang conservé ; malgré la leucocytolyse le sang conservé rend des services comparables à ceux du sang frais, si on l'injecte 10 jours au maximum après la récolte qui doit être faite sous la responsabilité de spécialistes compétents. Ses indications sont : les hémorragies, le schock hémorragique et certaines intoxications. Le matériel pour les transfusions doit être normalisé et permettre la transfusion goutte à goutte » (15).



SAPONINES

Les saponines constituent les principes actifs de drogues telles que la salsepareille, la douce-amère, la saponaire, le bois de gaïac, le bois de quillaja.

Ce sont des substances amorphes donnant avec l'eau des solutions colloïdales, moussant fortement par agitation et possédant des propriétés émulsionnantes. Elles sont assez solubles dans l'alcool méthylique chaud dilué, peu solubles dans l'alcool éthylique fort et l'acétone, insolubles dans l'éther et l'éther de pétrole.

Elles se classent en saponines acides et en saponines neutres ou Sapotoxines, suivant leur réaction. Elles ont une structure chimique d'hétéroglucosides.

On utilise en hypodermie la saponine du gaïac, poudre chamois-amorphe, fondant à + 110°, donnant des solutions aqueuses ou alcooliques opalescentes, peu soluble dans les huiles, insoluble dans les autres solvants organiques. C'est une saponine neutre, douée d'un grand pouvoir tensionégatif et émulsif vis-à-vis de l'acide urique et des sels de calcium ; elle n'est pas hémolytique.

Le soluté injectable est un soluté huileux à 2 °/₀₀, présenté en

ampoules de 5 cc. pour injections intramusculaires, indiquées dans la diathèse arthritique, pour hâter l'évolution des cicatrices et enfin contre les accidents tardifs de la syphilis. On en injectera d'abord, après avoir vérifié l'intégrité des reins, 1 cc., puis 2 jours après, 2 cc. Augmenter la dose de 1 cc. tous les 2 jours, jusqu'à 5 cc.

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SCOPOLAMINE

Synonyme : **Hyoscine.**

1. H. Lauger. — *Apoth. Ztg.*, 1912, n° 19, 174.
2. Straub. — *J. P. C.* (7), 1914, X, 75.
3. P. Breteau. — *J. P. C.* (7), 1924, XXX, in *U. P.*, 1925, LXVI, 4.
4. P. Lami. — *Bol. Chim. farm.*, 1927, LXVI, 297.
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La scopolamine est un alcaloïde pyridinique des Solanées, peu soluble dans l'eau, aussi l'utilise-t-on à l'état de bromhydrate. Ce sel se présente en cristaux rhombiques, incolores, légèrement efflorescents, très solubles dans l'eau, solubles dans l'alcool ; son pouvoir rotatoire est $\alpha_D = -24^o,5$. Le sel officinal, cristallisé à 3 molécules d'eau, contient 69 % de base, 19 % d'acide bromhydrique et 12 % d'eau de cristallisation (5).

Ses solutions aqueuses acides au tournesol ne sont pas altérées à la température ordinaire, mais à la longue, il s'y produit une racémisation partielle et même une hydrolyse avec formation de scopine. C'est ce qui avait été entrevu dès 1912 par Lauger, selon qui, les solutions de sels de scopolamine même additionnées de traces d'acide chlorhydrique ou bromhydrique pour éviter l'action des verres alcalins, étaient peu stables et subissaient à la longue une transformation se traduisant par une diminution notable de l'activité physiologique (diminution de 2/3 en 5 mois et de 16/17 en 9 mois). Les expériences étaient faites sur l'œil de chat et le cœur de grenouille (1). Il ne faut donc utiliser que des solutions récentes de bromhydrate de scopolamine ; d'après Straub on pourrait les conserver longtemps en les additionnant d'un alcool polyatomique : arabite, dulcite, mannite, et en particulier cette dernière à la dose de 10 gr. dans 100 cc. de soluté (2). On peut les stériliser au bain-marie à + 100° ou de préférence par

tyndallisation à + 70°, comme l'indique le Codex ; le soluté officinal titre 0 gr. 05 de bromhydrate de scopolamine pour 100 cc., soit un demi-milligramme par cc.

C'est un puissant sédatif du système nerveux prescrit dans la maladie de PARKINSON, la chorée, le délirium tremens, l'excitation des aliénés à la dose de 1/10e à 5/10e de mmgr., en injections sous-cutanées (5).

En chirurgie, comme préparation à l'anesthésie générale, on injecte 1 ou 2 heures avant, 1 cc. de l'association scopolamine-morphine dont la formule officinale est la suivante :

Chlorhydrate de morphine...............	cinquante centigr.
Bromhydrate de scopolamine............	0 gr. 025
Eau distillée, q. s. pour	100 cc.

A stériliser par tyndallisation à + 70°. Pour isotoniser le soluté, on peut lui ajouter 0 gr. 75 % de chlorure de sodium.

On peut également employer une association plus complexe :

Chlorhydrate de morphine.....................	un centigr.
Sulfate d'atropine	0 gr. 001
Bromhydrate de scopolamine	0 gr. 0001
Glucose...	0 gr. 25
Eau distillée, q. s. pour	1 cc.

La formule suivante est indiquée dans l'encéphalite léthargique :

Bromhydrate de scopolamine....................	0 gr. 0003
Sulfate d'atropine	0 gr. 0002
Chlorhydrate de morphine......................	0 gr. 005
Sulfate de spartéine	0 gr. 05
Méthylarsinate de soude	0 gr. 10
Acide citrique	0 gr. 05
Glucose..	0 gr. 25
Eau distillée, q. s. pour	2 cc.

La réaction doit être légèrement acide. La présence de glucose conserve l'activité de la scopolamine qui autrement s'atténue avec le temps (4).

Ces deux derniers solutés peuvent être stérilisés par tyndallisation ou préparés selon la méthode de BRETEAU (3), exposée en détail à l'article Cocaïne.

GÉNOSCOPOLAMINE

C'est l'aminoxyde de la scopolamine préparé par Max et Michel Polonovski. Elle se présente en masse pâteuse, aussi emploie-t-on son bromhydrate, sel cristallisé, 200 fois moins toxique que la scopolamine et ne produisant pas d'accoutumance.

Il est employé en chirurgie comme adjuvant de l'anesthésie. Avant l'opération, la veille au soir, faire ingérer 0 gr. 002 du produit et 45 minutes avant l'intervention en injecter 0 gr. 003 en association avec 0 gr. 015 de morphine ; l'anesthésie est meilleure, la respiration moins tumultueuse. On peut également l'employer en obstétrique (travaux de Touvet). Comme il s'élimine assez vite et ne provoque pas d'accoutumance, on peut renouveler les injections à faible dose en cas d'insomnie ou de douleurs post-opératoires. Il est présenté en ampoules de 0 gr. 001 et de 0 gr. 003 (6).

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54. INSTITUT PASTEUR. — *Instructions sur le mode d'emploi des sérums et vaccins.*
55. A. GORIS et A. LIOT. — *Trait. Pharm. Gal.*, Paris, 1939, II, 1416, 1458.
56. A. PETTIT. — *Sérothérapie antipoliomyélitique d'origine animale.*

La sérothérapie suppose connues les notions de coagulabilité du sang, d'immunité, et d'anaphylaxie qu'il nous est impossible d'ex-

poser ici. On les trouvera développées en particulier dans le *Traité de Pharmacie Galénique* de GORIS et LIOT, tome II, page 1416.

Les sérums employés en thérapeutique hypodermique sont recueillis et conservés en observant les règles de l'asepsie la plus rigoureuse. Ils se classent en 4 catégories, selon leur origine :

1° Sujets immunisés contre certaines maladies infectieuses ; ce sont des sérums de convalescents ou de vaccinés, recueillis dans des centres spéciaux (notamment l'hôpital Claude-Bernard à Paris). Il va sans dire que les donneurs doivent être indemnes de syphilis, tuberculose, etc... Leurs sérums sont utilisés soit purs, soit additionnés de formol du commerce (1 cc. pour 2 litres) : ceci permet de les garder stériles et d'économiser le temps nécessaire à l'exécution des réactions sérologiques, sans nuire à leur activité, ni rendre leur injection douloureuse (35).

Ils sont répartis en ampoules de faible capacité et conservés à la glacière. C'est à NETTER d'une part, et à NICOLLE et CONSEIL d'autre part, que l'on doit l'emploi des sérums de convalescents.

2° Animaux normaux.

3° Animaux greffés, ou privés de certains organes.

4° Animaux hypérimmunisés contre certaines maladies infectieuses.

Ces derniers seuls, constituent les sérums thérapeutiques proprement dits. Ils sont caractérisés, comme les sérums de convalescents, par la présence d'antitoxines spécifiques, et confèrent à l'organisme une immunité immédiate, mais passive et peu durable.

Ils se divisent comme suit :

— Sérums antitoxiques obtenus par vaccination des animaux avec une toxine. Ils sont préventifs et curatifs, neutralisent *in vitro* et *in vivo* la toxine, mais n'agissent pas sur les lésions déjà constituées.

— Sérums antimicrobiens obtenus par vaccination des animaux avec des corps microbiens. Ils sont curatifs.

— Sérums mixtes, à la fois antitoxiques et antimicrobiens.

Ne rentrent donc pas dans cette rubrique les solutés salins ou sucrés, improprement, mais couramment appelés sérums physiologiques. Pour la commodité du lecteur, nous exposons les sérums par ordre alphabétique, quelle que soit leur origine, en indiquant pour chacun la catégorie à laquelle il appartient.

IMMUNISATION ET RÉCOLTE

L'animal de choix est le cheval que l'on immunise selon une technique différente pour chaque sérum ; les sérums antimicrobiens avec des germes tués, atténués ou vivants ; les sérums antitoxiques avec des toxines atténuées ou pures, et surtout avec des anatoxines. La récolte se fait selon le procédé de Nocard et Roux, que Goris et Liot décrivent comme suit (57) :

« On enfonce dans la veine jugulaire du cheval un trocart auquel on adapte un caoutchouc obturé par une pince terminée par un tube de verre. Le volume des saignées est de 4 à 6 litres.

Le sang est recueilli dans un bocal de verre neutre, dont l'ouverture est fermée par deux coiffes de papier, séparées par un couvercle métallique, percé de deux trous. Le plus petit livre passage à l'ajutage de verre terminant le tube en caoutchouc ; l'autre, central, est traversé par un manneton qui surmonte une plaque de bronze étamé, portant à sa face inférieure des pointes longues de 7 cm. Une cheville traversant le manneton maintient le bloc de bronze suspendu au couvercle. Le tout est stérilisé.

Au moment de la saignée, on plonge le tube de verre au fond du bocal en crevant les 2 coiffes de papier. A la fin de la saignée, on retire l'ajutage de verre et on fait tourner le couvercle métallique d'un quart de tour, afin de mettre en chicane les trous du papier et ceux du couvercle et l'on couvre le bocal d'un épais capuchon de papier parchemin stérilisé en même temps que lui.

Après 5 ou 6 heures, la coagulation est bien amorcée et l'on porte les bocaux dans une salle maintenue à + 10°. On retire la cheville, on laisse tomber lentement sur le caillot le bloc de bronze, en le maintenant à l'aide d'une pince. Le poids fait exsuder 20 à 30 % de plus de sérum que la coagulation libre.

Au bout de 5 à 6 jours, on décante ce sérum que l'on conserve à la glacière en flacons de plusieurs litres. »

ACCIDENTS SÉRIQUES

Les injections de sérums se font par les voies sous-cutanée, intramusculaire, intraveineuse, intrarachidienne, et exceptionnellement par voie intraartérielle, intracérébrale ou intratrachéale. Elles ne sont contre-indiquées ni chez les femmes enceintes, ni

chez les nouveau-nés ; par contre, elles le sont chez les asthmatiques et les albuminuriques (56).

L'introduction parentérale de sérums hétérogènes peut engendrer des accidents précoces ou tardifs.

1° ACCIDENTS PRÉCOCES. — Rares à la suite d'une première injection, ils le sont beaucoup moins chez les malades déjà traités auparavant par un sérum quelconque.

a) *Accidents locaux* : ils consistent en un œdème centré sur le point d'inoculation, comportant assez fréquemment à sa périphérie des placards ortiés. Ils s'amendent d'habitude en 24 à 36 heures. L'application de compresses chaudes est un bon traitement de ces manifestations.

b) *Accidents généraux.* — Ils apparaissent surtout chez les sujets sensibilisés, sous forme de dyspnée, d'angoisse et même de syncope. Ils sont le plus souvent fugaces, mais nécessitent parfois le repos absolu et l'injection d'analeptiques et de toni-cardiaques.

On peut les éviter par la *Méthode de Besredka* : on injecte dans une veine du pli du coude, à des intervalles de 3 à 4 minutes successivement 1, puis 10, puis 50 cc. de dilution à 10 % de sérum de cheval dans le soluté de chlorure de sodium isotonique. Vingt minutes après, on pratique l'injection intrarachidienne, intra-veineuse ou intramusculaire, du sérum choisi.

Autre procédé. — Les injections lentes qui comportent la dilution du sérum au 1/4 dans le soluté de chlorure de sodium isotonique stérile et l'administration de cette dilution par voie intraveineuse ou intramusculaire à la moindre vitesse possible. Si malgré cela, les accidents surviennent, il faudra cesser immédiatement le traitement et dans le cas d'injection rachidienne, où l'on est obligé d'employer le sérum pur, laisser l'aiguille en place, ce qui permet l'élimination d'une certaine quantité du sérum injecté (56).

L'association au sérum de 0 gr. 20 de cholestérol dissous dans 10 gr. d'huile camphrée a, selon BARBARY, une action antichoc très marquée et favorise en même temps le développement de l'immunité (5).

2° ACCIDENTS TARDIFS. — Ils surviennent chez 14 % des sujets recevant du sérum pour la première fois et chez 50 % de ceux qui en ont déjà reçu. Le signe majeur est l'éruption parfois accompagnée de malaises, dyspnée, irrégularité du pouls, tumé-

factions ganglionnaires, arthralgies, rhumatismes généralisés. Bénignes chez les enfants, ces complications demandent chez l'adulte des soins attentifs : analeptiques et tonicardiaques : médication désensibilisante (chlorure de calcium *per os*, hyposulfite de soude intraveineux, etc...) (56).

PURIFICATION DES SÉRUMS

C'est pour supprimer définitivement ces phénomènes que l'on a cherché à purifier les sérums. Un moyen simple, préconisé autrefois par BESREDKA, consiste à les chauffer à + 56°, et à les laisser vieillir ensuite. Il est cependant insuffisant. Il faut en somme diminuer leur toxicité en éliminant les sels, les lipoïdes et les albumines responsables des phénomènes de choc et concentrer le plus possible les anticorps. Les méthodes modernes sont basées sur le fractionnement des protéines par des procédés physicochimiques, chimiques ou biologiques.

a) *Dessiccation et Coagulation* (BESREDKA).

Le sérum desséché est repris par deux parties d'eau ; on obtient un liquide sirupeux que l'on chauffe entre + 56° et + 60° pour le coaguler. Le coagulum est à son tour desséché et repris par l'eau ; la masse gonfle considérablement et se dissout partiellement sous forme d'un liquide jaunâtre que BESREDKA a appelé « sérum purifié ». Il contient la très grande majorité des antitoxines du sérum initial et trois fois moins de protéines. Il est donc trois fois moins toxique.

b) *Adsorption.*

On emploie l'hydroxyde d'aluminium qui retient 44 % des protéines sériques, sans toucher à l'antitoxine (3).

Ces deux procédés n'ont pas reçu d'applications pratiques.

c) *Electrodialyse.*

On élimine par dialyse les amino-acides, le glucose, le glycérol, les lipoïdes, etc... et on précipite en même temps les protides inactifs ou nuisibles à leurs points isoélectriques respectifs. Seule, reste en solution à son point isoélectrique en l'absence de sels, la pseudoglobuline et avec elle les antitoxines.

L'appareil est constitué par une cuve de verre que deux membranes hémiperméables divisent en trois compartiments : deux extérieurs contenant les électrodes et de l'eau distillée constam-

ment renouvelée, et un intérieur contenant le sérum agité mécaniquement. Lorsqu'il est purifié, il devient mauvais conducteur de l'électricité et la chute de tension du courant qui le traverse indique la fin de l'opération.

Le précipité de protéines est séparé par filtration ; le filtrat est une solution de pseudoglobuline et d'antitoxine que l'on isotonise par addition de 9 ‰ de chlorure de sodium, on y ajoute 3 ‰ de phénol et on ajuste le pH à 7. Sa teneur en pseudoglobuline est élevée : 9 %, alors que le sérum d'un animal normal en renferme 2,5 % et celui d'un animal immunisé 4 à 6 % (57).

d) *Précipitation par l'acétone* (Piettre et Vila).

On opère à 0° ; on précipite le sérum par 2,5 volumes d'acétone. Le précipité séparé par filtration à la trompe, est essoré, lavé à l'acétone froide, puis à l'éther pour éliminer les lipoïdes, et enfin séché. Cette poudre, conservée au sec, peut rester indéfiniment active. Pour en éliminer les deux albumines fondamentales, on la reprend par un volume d'eau distillée, égal à celui du sérum initial ; on précipite la globuline en neutralisant exactement par un acide N/100 à 0° et après saturation à l'éther. Les antitoxines restent dissoutes avec la sérine. On peut à nouveau purifier cette solution par l'acétone ; le précipité n'est pas entièrement soluble dans l'eau et le résidu est la « myxoprotéine » dont les propriétés sont intermédiaires entre celles des albumines et des globulines. Les agglutinines, les précipitines et les sensibilisatrices accompagnent la globuline.

Les travaux de ces auteurs sud-américains montrent l'intérêt de séparer la globuline, qui non seulement constitue un poids mort, mais possède à elle seule la propriété d'engendrer des précipitines ; on pourrait sans doute ainsi, réduire considérablement les accidents sériques (1), (3).

Cette méthode dont les principes sont assez controversés semble être la plus rationnelle selon Besson et Ehringer (2).

e) *Précipitation par les sels neutres.*

C'est le procédé le plus courant. Les sels employés sont le sulfate d'ammoniaque, le sulfate de magnésie, et surtout le sulfate de soude. On précipite l'euglobuline par ce dernier, à demi saturation. On centrifuge. La saturation, par une nouvelle quantité de sel précipite la pseudoglobuline qui adsorbe l'antitoxine. Ce précipité, repris par l'eau distillée, est débarrassé de l'excès de sulfate de

soude par dialyse, puis on stérilise par deux filtrations sur bougie Berkefeld. On a ainsi une solution d'antitoxine privée d'environ 60 % des protéines sériques. Toutes les manipulations entraînent une perte sensible de l'activité antitoxique (15 %) (3).

Ramon préfère utiliser l'artifice suivant : Le précipité de pseudoglobuline, séparé par filtration, est mis à la glacière à + 2°, le sulfate de soude cristallise. L'antitoxine qui ne se trouve plus en présence d'une solution saturée de sel neutre traverse le filtre ; on la dilue dans l'eau ou dans le soluté de chlorure de sodium à 7 °/oo, ce qui donne un sérum purifié, isotonique, renfermant 66 % moins de protéines que le sérum ordinaire. C'est la méthode suivie à l'Institut Pasteur (57).

f) *Procédé biologique de* Ramon.

Il est théoriquement parfait, mais n'est pas applicable industriellement ; on fait floculer la toxine par l'antitoxine. Le floculum très pauvre en albumines, n'a qu'une masse minime par rapport à celle du sérum initial. On le reprend par l'eau acidulée à 1°/oo et on le chauffe une heure à + 58°. La toxine est détruite, l'antitoxine reste sensiblement intacte et l'on récupère ainsi 75 % de la valeur antitoxique originelle (3).

Les sérums purifiés sont aussi désignés sous le nom de sérums désalbuminés.

SÉRUMS DESSÉCHÉS

Les sérums desséchés dans le vide sulfurique se présentent en petits fragments jaunes, assez solubles dans l'eau si l'on a soin d'employer au début une très petite quantité de liquide (57). Ils sont destinés aux pays chauds et lointains et se conservent longtemps. Ils sont présentés en flacons de 10 cc. bouchés au caoutchouc, contenant chacun 1 gr. de sérum desséché, soit 10 cc. de sérum liquide.

L'Institut Pasteur indique le mode d'emploi suivant : « On ajoutera sur le sérum sec 9 cc. d'eau stérile et après complète dissolution le liquide est prêt à injecter.

Pour l'emploi : flamber le goulot du flacon après l'avoir débouché, puis placer le flacon horizontalement de façon à distribuer la matière dans toute sa longueur. Y introduire une petite portion de l'eau et faire ensuite tourner le flacon pour en humecter les parois et déterminer l'adhérence des grains de sérum.

« Ce résultat obtenu, redresser le flacon verticalement et achever d'y verser la quantité d'eau nécessaire pour porter le volume à 10 cc. ; la solution se fait alors rapidement, le soluté reste parfois légèrement opalescent. On peut aussi dissoudre le sérum sec dans un récipient quelconque pourvu que ce récipient et l'eau soient stériles » (56).

Seuls, les sérums antiméningococcique et antipneumococcique n'existent pas sous cette forme.

TITRAGE

L'activité des sérums s'exprime en unités antitoxiques ou antimicrobiennes. L'unité antitoxique est la quantité d'antitoxine capable de neutraliser 100 doses toxiques, c'est-à-dire 100 doses minima mortelles d'une toxine vis-à-vis d'un animal spécialement choisi pour chaque cas, en général le cobaye ou la souris.

Les étalons sont des sérums dont les propriétés sont fixes et non des toxines qui s'atténuent avec le temps. Ils sont établis en poids comme l'indique le tableau ci-dessous, et délivrés à l'état sec par l'Institut Sérologique de Copenhague, sous l'égide de la S. D. N. On les dissout au moment de l'emploi dans le véhicule ci-dessous : (57).

Soluté de chlorure de sodium isotonique........... 1 partie
Glycérine.................................... 2 parties

Noms	Poids de l'unité internationale	Dilution utilisée
Antidiphtérique	0 mgr. 0628	0 cc. 1
Antitétanique	0 mgr. 1547	0 cc. 1
Antidysentérique	0 mgr. 0500	0 cc. 005
Antiperfringens	0 mgr. 2260	0 cc. 05
Antivibrionseptique	0 mgr. 2377	0 cc. 05
Antiœdematiens	0 mgr. 2681	0 cc. 05
Antipneumococcique I	0 mgr. 0886	0 cc. 005
Antipneumococcique II	0 mgr. 0894	0 cc. 005
Antistaphylococcique	0 mgr. 5000	0 cc. 05
Antihypolytique	0 mgr. 3575	0 cc. 05

Ehrlich avait indiqué autrefois une méthode de titrage très complexe ; on utilise aujourd'hui celle de Ramon, basée sur le principe suivant : la floculation d'une toxine par l'antisérum cor-

respondant se produit avec le maximum de vitesse lorsque les deux constituants sont physiologiquement neutralisés l'un par l'autre.

On prépare une gamme de tubes contenant tous 20 cc. de toxine d'activité connue et des quantités de sérum homologue décroissant de 1,5 cc. à 0,5 cc. Il se produit une floculation spécifique qui débute dans un seul des tubes de la série, puis se manifeste progressivement vers les extrémités de la gamme. En portant en abscisses les volumes de sérum donnant la floculation et en ordonnées les inverses des temps de floculation, on obtient une courbe en cloche.

La floculation initiale correspond à la neutralisation physiologique exacte de la toxine par l'antitoxine. On dose d'abord par cette méthode une certaine toxine à partir d'un sérum standard contenant 250 unités antitoxiques au centimètre cube. Si par exemple, la floculation initiale se produit avec 0,8 cc. de sérum, 20 cc. de cette toxine correspondent à $0{,}8 \times 250 = 200$ unités antitoxiques.

Donc, le volume de sérum à doser qui donne la floculation initiale avec 20 cc. de toxine contiendra toujours 200 unités antitoxiques. Une simple règle de trois donne le titre par centimètre cube. Il est possible, par conséquent, de construire une table donnant, en fonction du volume nécessaire, et suffisant pour obtenir la floculation initiale de 20 cc. de toxine, le taux en unités antitoxiques des sérums à essayer. Cette table, qui n'est valable que pour une seule toxine, doit être établie à nouveau quand cette dernière est épuisée ou si son activité a diminué (3).

CONSERVATION

Les sérums se conservent fort longtemps en lieu frais à l'abri de la lumière et le délai limite d'un an, indiqué au début de la législation, est actuellement beaucoup plus considérable.

Ils sont délivrés en ampoules à pointe unique, fermées au chalumeau, d'une capacité de 10 ou 20 cc. Le léger dépôt qui s'y forme parfois n'est pas un signe d'altération et le sérum limpide qui surnage est parfaitement efficace. D'ailleurs, si l'on a soin de conserver les ampoules la pointe en bas, le dépôt s'y rassemble, ne trouble plus le liquide et s'élimine d'emblée à l'ouverture (56).

DISPOSITIONS LÉGALES

La législation française concernant les sérums est représentée par les lois et décrets suivants qui figurent *in extenso* au Codex (6) :

Loi du 14 juin 1934 abrogeant celle du 25 avril 1895.

Décret du 15 juin 1934.

Décret du 29 août 1935.

Décrets des 4 et 5 février 1937.

La réglementation internationale a été adoptée sous forme de conclusions par la 6e Assemblée Générale de la Fédération Internationale Pharmaceutique réunie à La Haye en 1927 (4).

1° La préparation des sérums, etc... est soumise à une autorisation préalable du Gouvernement.

2° Seuls, les laboratoires où les produits sont préparés, présentant toute garantie au point de vue scientifique et hygiénique, pourront recevoir l'autorisation précitée.

3° Les Laboratoires ayant reçu une autorisation seront soumis à la surveillance constante du Gouvernement.

4° La vente des sérums, etc..., est réservée aux pharmacies.

SÉRUM ANTIBOTULINIQUE

Le sérum antibotulinique est un sérum thérapeutique proprement dit, antitoxique.

On le prépare à partir d'un cheval déjà hyperimmunisé contre la toxine A. On le saigne, puis on le laisse au repos pendant un mois. On commence alors l'immunisation contre la toxine B ; lorsque cette seconde période est terminée, on pratique une injection de rappel de toxine A. On récolte ainsi un sérum bivalent très actif.

Quand le cheval est suffisamment immunisé contre les deux toxines, les injections ultérieures se font sur le rythme suivant : 3 semaines après les saignées, on injecte de la toxine A, 8 jours après de la toxine B, et on prélève 6 litres de sang 12 jours après cette dernière injection (8).

Ravina et Gilbert Dreyfus ont pu guérir le botulisme en injectant quotidiennement sous la peau 40 à 60 cc. de sérum, et en outre 1/2 cc. d'anatoxine le premier jour et 1 cc. le huitième jour (7).

SÉRUM ANTICHARBONNEUX

Le sérum anticharbonneux est un sérum thérapeutique proprement dit, antimicrobien préparé en hyperimmunisant des chevaux au moyen de cultures virulentes de bactéridies charbonneuses (54).

Dès que le diagnostic est posé, il faut injecter le sérum dans le tissu cellulaire sous-cutané du flanc ou de la cuisse ; la dose doit être d'autant plus forte que la pustule maligne est plus avancée, et le traitement poursuivi deux, trois ou quatre jours de suite, tant qu'il n'y a pas sédation des phénomènes locaux et généraux (9). Les doses au début sont de 40 à 60 cc., puis de 20 à 40 cc. (54).

SÉRUM ANTICOLIBACILLAIRE

Le sérum anticolibacillaire est un sérum thérapeutique proprement dit, antimicrobien et antitoxique, préparé par H. Vincent, à partir de chevaux immunisés avec des antigènes provenant de plusieurs races de colibacilles. Ceux-ci secrètent une toxine neurotrope, une toxine entérotrope, et une endotoxine insoluble ; le sérum est actif contre les deux premières. Son pouvoir antitoxique et son pouvoir antimicrobien sont élevés ; il est débarrassé de la majeure partie des albumines inutiles. On peut l'employer par voie sous-cutanée (la plus fréquente), par voie intramusculaire, ou par voie intraveineuse ; dans ce dernier cas, il faut le faire tiédir à + 37° avant l'injection. Les doses habituelles sont de 15 à 20 cc. par jour, quatre jours de suite ; on peut les augmenter et poursuivre le traitement plus longtemps en cas de besoin (53).

Il est actif contre toutes les infections à colibacilles et peut à lui seul amener la guérison de la pyélonéphrite suppurée (10). Devant une appendicite grave ou compliquée, on en injectera 50 à 60 cc. par jour, le plus tôt possible, et 80 à 100 cc. dans les cas extrêmes, en diminuant les quantités à mesure que l'état du malade s'améliore. On fera un examen bactériologique de la sérosité et du pus, et on associera au sérum anticolibacillaire le sérum antigangréneux multivalent, le cas échéant (11).

SÉRUM ANTIDIPHTÉRIQUE

Le sérum antidiphtérique figure au Codex ; c'est un sérum thérapeutique proprement dit, antitoxique, préventif et curatif, pré-

paré pour la première fois par ROUX, MARTIN et CHAILLOU, en 1894.

Il est actuellement fourni par le cheval hyperimmunisé contre la toxine d'une souche de corynebacterium diphteriae dont le pouvoir pathogène et toxigène est le plus élevé que l'on connaisse : le bacille N° 8 de W. PARK et A. WILLIAMS, isolé en 1894. On l'a cultivé sur plusieurs milieux ; le bouillon Martin primitivement employé est peu différent du dernier milieu adopté par RAMON :

Panse de porc	225 gr.
Eau ordinaire	1 000 cc.
Acide chlorhydrique pur	10 cc.

Amorcer la digestion à + 45° pendant 2 heures, puis ajouter :

Chair musculaire de veau	325 gr.

Faire digérer à + 45° pendant 20 à 22 heures. Filtrer sur toile, puis sur papier.

Alcaliniser à pH = 8, chauffer à + 100° pour coaguler.

Ajouter à 1.000 cc. de milieu.

Glucose	1 gr. 50
Acétate de soude	5 gr.

Au bout de 8 jours, pendant lesquels des voiles successifs se sont produits à la surface, puis sont tombés au fond du ballon, la culture est terminée. On filtre sur papier Chardin, puis sur bougie. On obtient ainsi un liquide très complexe dit « toxine diphtérique », dont 1 /3000 de cc. tue un cobaye de 350 gr. En réalité, la toxine diphtérique ne représente qu'une infime portion de la matière sèche (55).

Les procédés d'immunisation du cheval se sont sans cesse perfectionnés. L'antigène est l'anatoxine préparée en soumettant la toxine à l'action combinée du formol et de la chaleur à + 37°. On peut, à l'heure actuelle, après 18 jours d'hyperimmunisation et 6 injections représentant au total à peine 1 litre d'anatoxine additionnée de tapioca, produire chez le cheval des sérums titrant 1.250 unités en moyenne. C'est-à-dire qu'on obtient beaucoup plus rapidement qu'autrefois un titre beaucoup plus élevé ; l'addition de tapioca provoque un afflux de leucocytes au point d'injection et active ainsi l'immunisation (15).

La récolte se fait par le procédé de NOCARD et ROUX ; la puri-

fication et le titrage par les procédés de RAMON précédemment indiqués. — Le titre exigé par le Codex est de 300 unités antitoxiques (U. A.) par centimètre cube : un cc. doit neutraliser 30.000 fois la dose de toxine qui tue en 96 heures un cobaye de 250 gr.

Le sérum est réparti aseptiquement en ampoules préalablement stérilisées. Celles qui contiennent le sérum ordinaire, non purifié, sont ensuite chauffées à + 56° pendant 1 heure pour le stabiliser et diminuer ses propriétés toxiques.

Les formes commerciales du sérum antidiphtérique sont indiquées ci-dessous :

1° Sérum antidiphtérique de l'Institut Pasteur :

Ampoules de 10 cc. contenant 3.000 U. A. soit 300 U. A. pour 1 cc.
Ampoules de 10 cc. contenant 5.000 U. A. soit 500 U. A. pour 1 cc.
Ampoules de 10 cc. contenant 10.000 U. A. soit 1.000 U. A. pour 1 cc.

2° Sérum antidiphtérique purifié de l'Institut Pasteur :

Ampoules de 2 cc. contenant 1.000 U. A. soit 500 U. A. pour 1 cc. (dose préventive)
Ampoules de 10 cc. contenant 5.000 U. A. soit 500 U. A. pour 1 cc. (dose curative)

3° Sérum desséché de l'Institut Pasteur :

Ampoules de 10 cc. contenant 1 gr. de sérum sec soit 3.000 U. A.

4° Sérum purifié Clin :

Ampoules de 10 cc. contenant 5.000 U. A. soit 500 U. A. pour 1 cc.
Ampoules de 10 cc. contenant 10.000 U. A. soit 1.000 U. A. pour 1 cc.

Les doses préventives sont de 1.000 à 5.000 unités suivant l'âge. Elles confèrent aux sujets exposés à la contagion une immunité de 3 semaines environ. Le sérum purifié est particulièrement indiqué dans ce cas.

Les doses curatives varient suivant les auteurs : pour LESNÉ les doses moyennes sont de 500 U. A. par kgr. de poids corporel et par jour, dans les formes simples, de 1.000 U. A. dans les formes graves. D'après DEBRÉ, RAMON et BERNARD, une injection de 20.000 U. A. chez un enfant de 3 ans, de 50.000 U. A. chez un enfant de 13 à 14 ans serait suffisante (13).

Pour Paul GIRAUD, il faut injecter 150 à 300 cc. de sérum tous les 2 ou 3 jours, en renonçant au calcul par unités ; l'efficacité d'un sérum ne dépendrait pas uniquement de sa richesse en antitoxine. Le sérum purifié et concentré à 5.000 U. A. par cc. pour usage pré-

ventif, serait, selon l'auteur, peu efficace malgré son titre élevé. Le sérum à 1.000 U. A. ne sera pas employé à des doses 3 fois moins fortes que le sérum à 300 unités qui reste celui que l'on devra utiliser dans les cas légers et moyens. L'injection unique et massive n'est pas à conseiller ; il semble préférable de faire suivre la première dose forte (au moins 50 cc.) de 2 ou 3 autres analogues ou à peine inférieures (16).

En tous cas, le sérum antidiphtérique est d'autant plus efficace qu'il est employé précocement et on doit l'injecter d'emblée dès que le diagnostic clinique est posé, sans attendre la confirmation du laboratoire.

On a essayé de prolonger l'immunité conférée par le sérum en lui associant l'anatoxine selon la méthode appelée séro-anatoxithérapie par RAMON : elle consiste à injecter simultanément en deux points différents, d'une part, 1 /10e de cc.d 'anatoxine diphtérique et d'autre part, une dose unique et massive de 10.000 à 60.000 U. A. de sérum suivant les cas, puis 0,5, 1 et 2 cc. d'anatoxine à 5 jours d'intervalle (14). GIRAUD a critiqué cette façon de faire qui serait peu utile à la période initiale et surtout en cas de syndrome malin. Les injections d'anatoxine ne donnent de bons résultats que si on les pratique au 5e ou 6e jour qui suit la fin de la sérothérapie (17).

MARQUEZY a pu préparer un sérum antidiphtérique mixte antimicrobien et antitoxique, en injectant successivement au cheval un mélange de toxine diphtérique et de sérum antitoxique correspondant, puis de la toxine pure, et enfin des bacilles vivants. Il associe à la souche classique de PARK et WILLIAMS des souches très pathogènes provenant de diphtéries malignes et utilisées très peu de temps après leur isolement (12).

SÉRUM ANTIDYSENTÉRIQUE

Le sérum antidysentérique est un sérum thérapeutique proprement dit, antitoxique, figurant au Codex, actif exclusivement contre la dysenterie à Bacilles de Shiga.

Il est fourni par le cheval immunisé, autrefois avec des toxines atténuées par la liqueur de Gram, et actuellement avec de l'anatoxine ; on le recueille selon le procédé précédemment indiqué.

Son titre doit être tel que 1 cc. de sérum dilué au 1 /200e mêlé à 1 cc. de toxine doit rendre cette dernière inoffensive pour les

souris blanches, chez 66 % des animaux injectés, au moins (55). Ses effets sont d'autant plus rapides et plus décisifs que l'administration est plus voisine du début de la maladie. Au début des dysenteries moyennes, 40 cc. suffisent le plus souvent. Si après 24 heures, les selles restent fréquentes et accompagnées de coliques, il faut renouveler l'injection ; quelquefois, dans les formes sévères ou datant de plusieurs jours, une troisième injection à dose moindre est utile. Dans les dysenteries graves, il faut injecter d'emblée 40 à 60 cc. de sérum et autant le lendemain ; si les troubles intestinaux ne sont pas suffisamment apaisés, l'emploi du sérum doit être poursuivi à doses décroissantes jusqu'à ce que les selles se réduisent à quelques-unes. Dans les formes les plus graves, et surtout traitées tardivement, il faut recourir à des doses massives : 80 à 100 cc. réparties en deux injections quotidiennes, tant que les manifestations intestinales ne s'amendent pas. Puis on réduit progressivement les volumes injectés.

A la dose de 10 cc., le sérum antidysentérique confère une immunité de 10 ou 12 jours environ ; on peut ainsi, surtout dans les familles comprenant des enfants, faire des injections préventives aux personnes exposées à la contagion (54).

SÉRUM CONTRE L'ENCÉPHALITE POST-VACCINALE

Ce sérum est fourni par des sujets récemment vaccinés avec succès et prélevé à partir du 14e jour qui suit l'apparition de la pustule vaccinale. Il a donné à Hekman d'excellents résultats en injections intraveineuses (18).

SÉRUMS ANTIGANGRÉNEUX

Les sérums antigangréneux figurent au Codex. Ce sont des sérums thérapeutiques proprement dits, antitoxiques et antimicrobiens, préparés en immunisant des chevaux avec les germes anaérobies de la gangrène gazeuse et leurs toxines, enrobés de lanoline.

Ce procédé a les avantages suivants : les chevaux fournissent un sérum convenable dès la première injection et toujours utilisable en thérapeutique dès la seconde. Son titre en unités est plus élevé que par n'importe quel autre procédé : (1.200 U. pour le sérum antiperfringens, 2.200 pour le sérum antivibrionseptique) ;

enfin, les chevaux n'ayant jamais donné de sérums satisfaisants avec les anciens procédés, peuvent à la longue en fournir d'acceptables (19).

L'Institut Pasteur prépare des sérums monovalents : antiperfringens, antihystoliticus et antivibrionseptique qui doivent titrer 100 U. A. par cc. ; antiœdematicus qui doit titrer 1.000 U. A. par cc., et antisporogènes, surtout antifermentaire, qui ne comporte pas de titre en unités.

L'U. A. internationale est la quantité d'antitoxine qui neutralise 20 doses minima mortelles de toxine de B. perfringens, B. hystoliticus et V. septicus et 100 doses minima mortelles de toxine de B. œdematicus, en prenant la souris comme réactif (55).

Le sérum polyvalent préventif de l'Institut Pasteur est constitué par le mélange suivant :

Sérum	antiperfringens	4 parties
»	antivibriosepticus	4 »
»	antiœdematicus	2 »
»	antisporogènes	1 »
»	antihistolyticus	1 »

La dose minima est de 20 cc. par voie sous-cutanée ou intramusculaire. En cas de blessures graves et avant toute manifestation de gangrène gazeuse, on injectera sous la peau, en même temps que du sérum antitétanique 20 à 40 cc. de sérum antigangréneux polyvalent.

Si la gangrène est au début de son évolution, injecter immédiatement sous la peau 120 cc. de sérum antigangréneux polyvalent dilués dans 300 cc. d'eau physiologique. Réduire ces doses de moitié pour les enfants au-dessous de 10 ans. Si le blessé est choqué (tachycardie, hypotension), diluer le sérum dans 1.000 cc. d'eau physiologique ; même si l'état général et local s'est amélioré le lendemain, il est prudent de pratiquer une deuxième injection sous-cutanée identique à la première. Si les choses sont restées stationnaires, ou ont empiré, cette seconde injection sera pratiquée par la voie veineuse.

Dans les cas très graves ou même désespérés, il faut injecter le sérum dans les veines en faisant auparavant deux injections antianaphylactiques : diluer 5 cc. de sérum antigangréneux polyvalent dans 50 cc. d'eau physiologique, injecter 10 cc. de cette dilution à raison de 1 cc. toutes les 30 secondes, dans une veine du pli du coude. 15 minutes après, injecter 20 cc. de la même dilu-

tion à raison de 2 cc. toutes les 30 secondes. Si 15 minutes après cette deuxième injection, le malade ne présente aucun phénomène anaphylactique, faire une injection intraveineuse de 150 cc. de sérum polyvalent dilué dans 850 cc. d'eau physiologique.

On se servira d'une aiguille fine pour ralentir le débit. Si au bout de 20 minutes, le malade ne réagit pas de façon anormale, on peut augmenter un peu la vitesse en ouvrant une pince de Mohr placée sur le tube de caoutchouc qui relie l'ampoule à l'aiguille.

Dans ces conditions, l'opération dure environ 1 heure à 1 h. 30. Le moindre malaise du patient doit aussitôt faire cesser l'injection et appliquer sur la face des compresses d'eau glacée. On peut poursuivre l'administration de sérum dès que les phénomènes d'intolérance ont disparu. Il est parfois nécessaire de renouveler l'injection le lendemain.

Autres indications du sérum antigangréneux à titre préventif et curatif : appendicite, gangrène pulmonaire, septicémie puerpérale (54).

Selon le professeur H. Vincent, on ne doit pas employer un mélange de sérums monovalents, mais un sérum polyvalent antimicrobien et antitoxique, provenant de chevaux immunisés contre la totalité des virus, de leurs races et de leurs toxines. Il faut entreprendre le traitement aussi précocement que possible. La dose préventive est de 20 cc. Au début d'une gangrène, on en injectera 60 cc. dilués dans l'eau physiologique tiède. La voie intraveineuse est la méthode de choix surtout si l'on peut faire une injection lente, et en ajoutant au liquide 6 gr. de salicylate de soude et de l'adrénaline comme antichoc. Si l'on ne constate pas d'amélioration au bout de 6 à 8 heures, il faut injecter de nouveau 20 à 40 cc. de sérum (20).

SÉRUM ANTIGONOCOCCIQUE

Le sérum antigonococcique est un sérum antimicrobien, autrefois préparé à l'Institut Pasteur selon le procédé de M. Nicolle et Debains, par injections intraveineuses au cheval, de cultures de gonocoques.

Ravaut et Maurice Nicolle ont indiqué de le diluer dans de l'eau physiologique et de l'injecter très lentement. La voie de choix est la voie intraveineuse (53). Malgré les dangers de cette méthode,

il y a lieu d'y avoir recours dans les cas d'arthrite aiguë avec impotence fonctionnelle (22) et de septicémies.

Un autre sérum, celui de STERIAN, est obtenu en injectant dans le testicule du cheval, du pus blennorrhagique.

Le sérum de BAIZOT est fourni par le bœuf injecté avec une émulsion de gonocoques. On lui ajoute de la gonacrine avant l'emploi et on instille quelques centimètres cubes de ce mélange dans l'urèthre plusieurs fois par jour. C'est là l'unique façon d'utiliser cette médication (53).

Le sérum de VAIDIE est spécifique et ne peut être remplacé par aucun autre ; les chocs qu'il provoque sont un adjuvant utile ; il donne par voie intraveineuse des résultats constants dans tous les cas d'arthrites et de gonococcémies (21).

Les sérums antigonococciques ont beaucoup perdu de leur intérêt depuis l'apparition de la thérapeutique sulfamidée.

SÉRUMS CONTRE LA GRIPPE

On peut utiliser, soit le sérum de cheval immunisé, soit le sérum ou le plasma de convalescents.

1° *Sérum de cheval immunisé :*

L'antigène est une émulsion de poumons ou de muqueuse nasale des cornets de furets infectés. Les organes sont hachés, puis broyés en pâte fine avec du sable stérile dans un mortier flambé. On ajoute à cette pâte un mélange à parties égales de bouillon et de solution physiologique de façon à réaliser une teneur de 10 % en tissus virulents. Une centrifugation rapide élimine le sable et les particules grossières ; le liquide surnageant sert aux inoculations à raison de 15 cc., une fois par semaine, pendant plusieurs mois. Le sérum est utilisable après dosage de son pouvoir antitoxique, mais ni DUJARRIC de la RIVIÈRE, ni les médecins anglais qui ont étudié la question, n'ont encore publié leurs résultats.

2° *Sérum de convalescents :*

L. W. Mac GUIRE et W. R. REDDEN utilisent le sérum de convalescents récolté 7 à 10 jours après le retour de la température à la normale, à la suite d'une pneumonie grippale. Les sujets qui ont une réaction de Bordet-Wassermann positive sont éliminés. On pratique 2 saignées de 500 cc. chaque fois à 1 ou 2 jours d'intervalle ; on récolte le sang dans un flacon stérile que l'on porte

d'abord 1 heure à + 37°, puis à la glacière. Le rendement est de 200 cc. pour 500 cc. de sang ; on décante et on centrifuge à grande vitesse. Pour la conservation, on ajoute à 100 cc., 20 cc. de solution saline physiologique contenant 1,50 % de crésol, ce qui correspond à 0 gr. 30 de crésol pour 100 cc. de sérum. On le répartit en ampoules de 120 cc. Il est efficace 6 semaines après le prélèvement.

La dose habituelle est de 120 à 250 cc. au maximum, par voie intraveineuse, à renouveler à intervalles de 8 à 16 heures jusqu'à guérison. Les doses totales atteignent 300 à 600 cc. et même 700 cc. ; parfois 100 cc. suffisent.

3° *Plasma de convalescents :*

Grigaut et Moutier emploient le plasma de sujets indemnes de syphilis et de paludisme, saignés du 4e au 6e jour de leur convalescence. On recueille le sang dans des ballons contenant quelques centimètres cubes de solution de citrate de soude à 10 % jusqu'à ce que le mélange contienne 4 ‰ de citrate, soit 40 cc. de solution pour 1 litre.

Après repos, on décante dans des vases stériles et on utilise le plasma entre la 4e et la 8e heure après le prélèvement ; on en injecte par voie intraveineuse de 50 à 500 cc. par 24 heures (23).

SÉRUM ANTIHÉMORRAGIQUE

Le sérum antihémorragique est du sérum de cheval normal prélevé aseptiquement. Ses caractères figurent au Codex.

Il existe en ampoules de 10 et de 20 cc. ; il augmente la coagulabilité du sang ; il est donc indiqué en injections hypodermiques de 20 cc. au cours des hémorragies, des hématémèses, des hémophilies (Weill). Hort a reconnu ses propriétés très nettement hématopoïétiques ; des injections de 10 cc. répétées 5 à 6 fois tous les 3 jours, donnent de bons résultats dans l'anémie, et des injections quotidiennes de 2 cc., dans les cas de déchéance et de consomption (53).

Hamon et Pineau l'emploient contre les hémorragies dentaires, en injections locales intratissulaires de 1 cc. 5, à l'aide d'une aiguille à biseau court, dans l'épaisseur de la gencive, presque parallèlement au plan de la muqueuse. La dose est répartie par moitié du côté vestibulaire et du côté lingual (24).

Sous le nom d'Anthéma, on désigne le sérum d'un animal saigné et en période de régénération globulaire ; il est à la fois hémostatique (Dufour et Chelio) et hématopoïétique (Carnot et Deflandre), on en injecte par voie sous-cutanée ou intramusculaire une ampoule de 10 cc. au cours des états hémorragiques et avant les interventions chirurgicales pour faciliter l'hémostase (53).

SÉRUM ANTIMÉNINGOCOCCIQUE

Le sérum antiméningococcique est un sérum thérapeutique proprement dit, antimicrobien, figurant au Codex.

Maurice Nicolle et ses élèves ont montré l'existence de 4 races : A, B, C, D, de méningocoques ; la race D étant absolument exceptionnelle, on prépare un sérum trivalent et trois sérums monovalents anti A, anti B, anti C, au moyen du cheval immunisé par voie intraveineuse.

Dès le diagnostic de méningite cérébrospinale, on emploiera par la voie intrarachidienne le sérum polyvalent, puis une fois le germe identifié, le sérum monovalent correspondant (54) ; on pratique une ponction lombaire et on laisse écouler par l'aiguille une quantité de liquide égale à celle du sérum à injecter, ou même supérieure, afin d'abaisser la tension dans les espaces sous-arachnoïdiens. Par l'aiguille maintenue en place, on injecte lentement le sérum tiédi à + 38°. Puis le malade est placé la tête basse, le siège surélevé, pendant 2 heures, pour favoriser la diffusion vers les centres nerveux supérieurs. La dose varie de 20 à 40 cc. pour un adulte, de 10 à 20 cc. pour un enfant.

Ce traitement doit être suivi 3 à 4 jours, même si la première injection provoque une amélioration faisant supposer la guérison.

Dans les formes graves, il ne faut pas hésiter à injecter d'emblée 50 cc. et à renouveler cette dose matin et soir. Pour les injections ultérieures, on se guidera, en vue de les espacer, sur les modifications du liquide céphalo-rachidien et des signes cliniques.

La méningite cérébrospinale s'accompagnant le plus souvent de méningococcémie, il est indiqué d'associer des injections intraveineuses ou intramusculaires, (20 à 30 cc.) aux injections rachidiennes.

Les rechutes doivent être traitées comme la première atteinte ; toutefois, s'il s'est écoulé plus de 15 jours depuis le début du traitement, on devra prendre les précautions d'usage contre les

accidents anaphylactiques particulièrement sérieux après les injections intrarachidiennes ou intraveineuses.

Si l'on suspecte un blocage ventriculo-méningé, on pratiquera l'injection du sérum par voie sous-occipitale. Si la méningite cérébrospinale est compliquée d'épendymite, il faut faire une trépanoponction des ventricules et injecter 20 à 30 cc. de sérum par l'aiguille laissée en place.

Il est important de noter que le sérum est d'autant plus efficace qu'il est employé plus près du début de la maladie (54).

SÉRUM ANTIOURLIEN

C'est un sérum de convalescents qui permet une prophylaxie intéressante au cas d'épidémies survenant dans des collectivités : pensionnats, écoles, etc...

On doit n'utiliser comme donneurs que les sujets de bonne constitution, indemnes de syphilis. On prélève le sérum des premiers convalescents le 12e et le 16e jour de la maladie. Ce dernier paraît être le meilleur, mais il y aurait lieu d'étudier si l'autre ne permettrait pas d'enrayer les premiers cas de contagion. Les doses sont de 10 ou 20 cc. par voie sous-cutanée (26).

Il agit également de façon fort efficace contre les complications des oreillons : méningites et orchites. Il pourrait être remplacé par le sang (25).

SÉRUM ANTIPÉRITONITE

On emploie, soit le sérum de porc normal, soit un mélange de plusieurs sérums d'animaux immunisés.

1° *Sérum de porc normal :*

Il agirait biologiquement contre les toxines en excitant les défenses de l'organisme. Il donne de bons résultats contre la péritonite et aussi contre les autres infections à point de départ intestinal. Il est présenté en ampoules de 10 cc.

Après une appendicectomie, on instille dans les drains avant le pansement 40 à 50 cc. de ce médicament. Ramené dans son lit, le malade reçoit ensuite toutes les 3 heures, en injections sous-cutanées, 30 cc. de ce sérum dilués dans 250 cc. de soluté isotonique de chlorure de sodium ou de glucose, la dose totale variant de

150 à 200 cc. De plus, on aspire chaque jour par les drains les liquides septiques et on les remplace par 20 à 30 cc. de sérum de porc (27).

2° *Mélange de sérums d'animaux immunisés :*

Il a la composition suivante :

Sérum antigangréneux polyvalent..................	30 cc.
Sérum anticolibacillaire	40 cc.
Sérum complémentaire	10 cc.

(Le sérum complémentaire est préparé en immunisant des chevaux contre les germes secondaires de l'appendicite : entérocoques, streptocoques aérobies et anaérobies, B. ramosus, B. funduliformis, B. fusiformis, Staphylococcus parvulus, etc.) (54).

On en verse 80 cc. dans la cavité péritonéale à la fin de l'intervention et on en injecte la même dose diluée dans 200 à 250 cc. d'eau physiologique, par voie sous-cutanée ou intramusculaire ; on répètera 2 ou 3 fois le même traitement à 24 heures d'intervalle s'il y a lieu (28).

SÉRUM ANTIPESTEUX

Le sérum antipesteux est un sérum thérapeutique proprement dit, antimicrobien et légèrement antitoxique, fourni par le cheval immunisé au moyen d'injections intraveineuses ou sous-cutanées, de bacilles pesteux vivants (54).

Les bacilles pesteux, isolés des bubons d'un malade atteint de peste humaine, sont cultivés en sacs de collodion, dans le péritoine de lapins ou de cobayes pour exalter leur virulence. On les repique ensuite sur bouillon gélosé en boîtes de Roux. Au bout de 8 jours, les colonies sont nettes ; on les tue par chauffage à + 70° et on en fait une émulsion dans le soluté physiologique à 8 °/oo, que l'on injecte aux chevaux.

Le titre du sérum antipesteux doit être tel que :

1° 1/10e de cc. doit protéger une souris de 20 gr. contre l'injection simultanée de 1 cc. de toxine pesteuse, dont 1/80e de cc. suffit à tuer une souris de même poids.

2° 1/10e de cc. doit préserver une souris inoculée 16 heures auparavant avec une dose de bacille pesteux qui tue les témoins en 48 à 60 heures (55).

Injecté préventivement, le sérum antipesteux confère une im-

munité immédiate, mais qui disparaît au bout d'une dizaine de jours. Pour éviter les accidents sériques à quoi exposent les injections répétées, le sérum antipesteux préventif ne devra être employé qu'à bon escient : par exemple à bord d'un navire où un cas de peste s'est déclaré. La dose usuelle est de 10 cc.

L'action curative du sérum est d'autant plus efficace qu'il est injecté plus précocement ; les doses doivent être massives et réitérées : 300 cc. par jour. Par voie sous-cutanée, la résorption est trop lente, il faut employer la voie intraveineuse, ou, à la rigueur, la voie intramusculaire (54).

SÉRUM ANTIPHALLOIDIQUE

Le sérum antiphalloïdique est un sérum thérapeutique proprement dit, antitoxique, préparé par Dujarric de la Rivière, à partir du cheval immunisé contre les toxines de certaines amanites.

On triture au mortier, avec de la glycérine, un mélange d'A. Phalloïdes fraîches avec quelques A. vireuses et A. printanières. Le suc glycériné est filtré plusieurs fois sur bougie. Injecté à un petit animal, il reproduit exactement le syndrome phalloïdien ; injecté prudemment à un animal de forte taille (cheval) il y détermine une réaction suivie de la production d'une antitoxine correspondante ; l'immunisation achevée, on prélève le sérum qu'on filtre plusieurs fois sur bougie.

Il constitue ainsi l'antitoxine phalloïdienne douée d'un effet préventif et curatif incontestable à la dose moyenne de 40 cc. en injections intramusculaires (29).

SÉRUM ANTIPNEUMOCOCCIQUE

Le sérum antipneumococcique est un sérum antimicrobien, figurant au Codex. Il est constitué par le mélange de sérums de chevaux immunisés chacun contre un type différent de pneumocoque (types I, II, III). En fait, ce sérum contient surtout des anticorps du type I, le plus fréquemment rencontré dans les pneumonies. Il est actif contre toutes les infections à pneumocoques, avec d'autant plus de chances de succès que l'injection est plus précoce (54). Il existe aussi des sérums monovalents (types I et II) qu'il faut demander spécialement.

Le sérum antipneumococcique doit titrer au moins 200 unités

antitoxiques par centimètre cube. L'unité antitoxique est la plus petite dose capable de neutraliser 100 doses mortelles de culture virulente de pneumocoques. On prend 50 souris et on injecte dans le péritoine de chacune 1/100e de cc. d'une culture de pneumocoques vivants, de la race qui a servi à préparer le sérum à titrer. Une moitié des animaux reçoit une injection intraveineuse de sérum-étalon, l'autre, de sérum à étudier ; les deux sérums ont une activité égale si le pourcentage des morts est identique dans les 2 lots ; on recommence cet essai en variant les dilutions jusqu'à ce que l'on ait environ 50 % de morts de part et d'autre (55).

Pour prévenir les complications pulmonaires de la grippe, des fièvres éruptives, etc... on injectera 20 cc. de sérum antipneumococcique sous la peau ou dans les muscles, 10 cc. chez les enfants.

Pour traiter les infections pulmonaires, on injectera 40 à 100 cc. de sérum dans les muscles, en recommençant 2 ou 3 jours de suite. L'injection intraveineuse, plus active, pratiquée avec les précautions nécessaires, est à recommander surtout dans les cas sévères. Pour traiter les infections pleurales, on injectera 4 jours de suite 40 cc. de sérum dans la plèvre, après ponction et en association avec une injection intramusculaire ou intraveineuse. Enfin, pour traiter les infections méningées, on injectera 4 jours de suite, 40 cc. dans le canal rachidien et en plus si possible, 4 jours de suite, 20 cc. dans les veines, en faisant précéder chaque injection rachidienne de l'évacuation d'un égal volume de liquide céphalo-rachidien (54).

A côté de ces modes d'administration classiques, plusieurs auteurs ont préconisé, avec quelques variantes, la voie intraveineuse.

1° Selon A. Haines et L. Mangeney, il faut, en face d'une pneumonie très grave, injecter de 40 à 100 cc. de sérum dilués dans la solution de chlorure de sodium isotonique, en 1 heure à 1 heure et demie, concurremment avec une injection sous-cutanée (30).

2° Suarez recommande d'identifier d'abord le germe et d'injecter le sérum monovalent correspondant à la dose de 200 à 300 cc. par jour (31).

3° H. Alessandri et E. Anujo emploient un sérum actif contre les types I et II, concentré à 1.200 à 1.500 unités par centimètre cube. Après recherche de la sensibilité du malade, par instillation dans l'œil de quelques gouttes de sérum dilué au 1/5e, on pratique des injections de doses fractionnées : 5, 10, 20 cc., à 1 ou 2 heures d'intervalle, soit au total 50 cc., c'est-à-dire 60.000 unités. Répéter

cette dernière dose toutes les 3 heures jusqu'à défervescence, 150 cc. sont suffisants en général (32).

SÉRUM ANTIPOLIOMYÉLITIQUE

Le sérum antipoliomyélitique de l'Institut Pasteur, mis au point par A. PETTIT, est un sérum thérapeutique proprement dit, dont on ne saurait dire s'il est antitoxique ou antimicrobien, la poliomyélite étant une maladie à virus filtrant ; il est fourni par des chevaux immunisés, au moyen d'injections répétées d'émulsions de moelles épinières de singes poliomyélitiques qui renferment le virus spécifique.

Le traitement doit commencer dès la phase aiguë du début de la maladie, il est d'autant plus actif que plus précoce ; chez l'enfant, il devient inutile après le 10e jour. On injecte, dans la masse musculaire sacrolombaire, 20 à 60 cc. de sérum par jour (suivant l'âge et le temps écoulé depuis le début de la maladie), en une ou plusieurs fois, pendant 2, 4 ou 6 jours. L'injection intrarachidienne est plus efficace ; on injecte lentement 10 à 20 cc. de sérum tiédi à + 38°, après soustraction d'une quantité égale de liquide céphalo rachidien. Pendant les 24 premières heures, on pratique une injection rachidienne et 3 injections intramusculaires, le 2e jour 4 injections intramusculaires et une intrarachidienne, si c'est nécessaire, et on continue de même les jours suivants.

Ce sérum n'est délivré qu'aux médecins sur demande adressée par exprès ou par télégramme à l'Institut Pasteur de Paris, 36, rue du Dr Roux (XVe). Il faut indiquer l'âge du malade et la période de la maladie de façon à permettre l'envoi de doses appropriées (56).

On a également employé le sérum de convalescents prélevé après la 3e semaine de la maladie, ou celui d'anciens malades. A. NETTER a adopté à leur sujet les conclusions suivantes :

1° « On pourrait constituer à l'avance une provision de sérum d'anciens malades en vue d'une épidémie.

2° Dans cette provision entreront les sérums d'anciens malades et ceux de sujets dont la maladie ne remonte qu'à quelques mois. Il conviendra de mélanger le sérum de plusieurs donneurs dont la maladie date d'années différentes.

3° Bien que la température de + 56° réalisée au cours de la tyndallisation éloigne tout danger de syphilis et de tuberculose,

on soumettra le sang des donneurs à la réaction de Bordet-Wassermann dans tous les cas, surtout si l'on est amené à faire des injections intramusculaires de sang total et plus encore des transfusions » (33).

Mais on doit admettre que la teneur en immunisines du sérum concentré de cheval est notablement supérieure à celle des mélanges de sérums de convalescents (34).

SÉRUM ANTIROUGEOLEUX

Le sérum antirougeoleux est un sérum de convalescents prélevé entre le 7e et le 10e jour qui suit la défervescence.

Il est indiqué, à titre préventif, surtout chez les enfants de 6 mois à 3 ans, chez les débiles atteints de troubles digestifs d'hérédo-syphilis, de rachitisme et les convalescents de maladie grave. Les femmes enceintes seront traitées en temps d'épidémie, de même les ouvriers des villes, les populations très denses, les agglomérations d'enfants.

On injecte 0,5 cc. par 6 mois d'âge, avec une dose minima de 3 cc. L'injection doit être pratiquée avant le 5e jour qui suit le contage. Après le 6e jour, on ne peut espérer qu'une séro-atténuation ; il faut alors doubler les doses et les tripler au 7e et au 8e jour.

Devant la difficulté de se procurer du sérum de convalescents, de nombreux auteurs ont essayé le sérum d'adultes, en particulier Debré et ses élèves, qui ont obtenu de très bons résultats : la séro-prévention est réalisée dans 75 % des cas, la séro-atténuation dans 20 %. Il y a 5 % de rougeoles qui évoluent sans modifications. Les doses sont plus élevées que dans le cas précédent : 13 à 15 cc. chez les enfants de moins de 2 ans, 20 à 25 cc. de plus de 2 ans. Quelques légers accidents ont été signalés : température à + 39°, érythème sérique, lassitude (36).

SÉRUM ANTISCARLATINEUX

Le sérum antiscarlatineux est un sérum de convalescents prélevé vers la 5e semaine de la maladie.

Il ne peut agir comme moyen préventif que chez les enfants encore indemnes ou infectés depuis quelques heures seulement (37). Il diminue également la gravité des formes toxiques, à la dose de

40 à 70 cc. par jour, répétée 2 ou 3 fois à 24 heures d'intervalle (39).

Grâce aux travaux de l'école américaine (Dick, Park, Dochez, Zingler) sur l'origine streptococcique de la scarlatine, il a été possible d'employer sur de nouvelles bases la sérothérapie antistreptococcique avec le sérum de l'Institut Pasteur aux doses de 40 à 100 cc. par jour ; la voie intramusculaire paraît être le mode d'administration idéal ; les injections intraveineuses devant être réservées aux cas exceptionnellement graves (38).

SÉRUM ANTISCORPIONIQUE

Le sérum antiscorpionique est un sérum thérapeutique proprement dit, antitoxique. Il se prépare au moyen de macération des glandes venimeuses du scorpion algérien (Prionurus Australis), que l'on injecte à doses progressives à des ânes et à des chevaux, après addition de 2 gr. 50 de cholestérol pour 100 cc. Le sérum est additionné de formol suivant la technique de Ramon et chauffé à + 55°, pendant 45 minutes. Chaque échantillon est éprouvé sur la souris avant l'emploi (40).

SÉRUM ANTISTAPHYLOCOCCIQUE

Le sérum antistaphylococcique est un sérum thérapeutique proprement dit, antitoxique, figurant au Codex, fourni par des chevaux immunisés contre la toxine staphylococcique.

Pour obtenir une toxine très active, on cultive une souche spéciale de staphylocoques sur le milieu suivant : on fait bouillir pendant une demi-heure 500 gr. de rate de veau pulpée dans 1 litre d'eau et on passe à travers une chausse ; on ajoute ensuite, par litre, 15 gr. de peptone pepsique de viande de bœuf, et du carbonate de soude pour ajuster le pH à 7,5. On filtre sur papier après un chauffage de 20 minutes à + 100, puis on ajoute 12 gr. de tartrate de sodium par litre, comme sel tampon. On répartit ce milieu dans des matras de Fernbach à fond plat, de 1 litre, que l'on n'emplit qu'à moitié, et on stérilise à + 110° pendant 40 minutes. On ensemence, on porte à l'étuve à + 37° et on fait passer sur le milieu un mélange de 75 % d'air et de 25 % de gaz carbonique. Le milieu se trouble de plus en plus ; puis il se forme un voile qui finit par tomber en fragments au fond du matras. On filtre sur bougie après une semaine de séjour à l'étuve ; la toxine obtenue

est très active. Elle est employée directement pour la vaccination, ou sert à la préparation de l'anatoxine ; on ajoute à 1 litre de ce liquide 3 cc. de formol du commerce et on porte à 40° pendant 12 à 15 jours. On lui fait subir avant l'usage un certain nombre d'essais de toxicité (55).

Les animaux sont immunisés au moyen de doses progressivement croissantes d'anatoxine, puis de toxine jusqu'à ce que le sérum soit assez riche en antitoxine spécifique (41) ; on le récolte par le procédé de Nocard et Roux, précédemment indiqué.

Il doit titrer au moins 200 unités internationales par centimètre cube. Goris et Liot indiquent la technique suivante pour ce titrage. (55) « L'essai consiste à rechercher la dose de sérum capable d'empêcher l'hémolyse des globules rouges du lapin provoquée *in vitro* par une dose de toxine staphylococcique. Cette dose fixe correspond à la dose test hémolytique, c'est-à-dire à la plus petite quantité de toxine qui, ajoutée à l'unité antitoxique est encore capable d'hémolyser une goutte de dilution au 1 /3, de globules rouges de lapin. L'unité antitoxique est représentée par 0 mmgr. 500 de sérum étalon.

On introduit dans une série de tubes à hémolyse la quantité de toxine correspondant à la dose test gémolytique et 1 cc. de dilutions variables du sérum à titrer : ou 1 /150 — 1 /200 — 1 /250 etc... On amène le volume à 2 cc. avec le soluté phynologique et une goutte de dilution de globules rouges de lapin au 1 /3. On mélange et on porte à l'étuve à + 37° pendant 1 heure, puis on les laisse encore 1 heure à la température du laboratoire. On examine alors les tubes dans lesquels s'est faite l'hémolyse ; si elle s'est produite dans le tube contenant la dilution à 1 /250, et si elle est nulle dans le tube contenant la dilution à 1 /200, le titre du sérum sera supérieur à 200 et inférieur à 250 unités internationales. »

Ce sérum a déjà été employé, mais un usage plus étendu en fixera l'efficacité (41).

SÉRUM ANTISTREPTOCOCCIQUE

Le sérum antistreptococcique est un sérum thérapeutique proprement dit, polyvalent, qui figure au Codex.

Le sérum de l'Institut Pasteur, antimicrobien, est constitué par le mélange de sérums de chevaux immunisés chacun contre une

race particulière de streptocoques isolés de cas scarlatine, rougeole, érysipèle, etc.).

Il peut être employé, même à fortes doses, dans les diverses infections streptococciques, précocement de préférence, à raison de 20 à 40 cc. en injections intramusculaires ; dans les cas graves, on peut en administrer davantage et plusieurs jours de suite. Une dose massive d'emblée est préférable à de petites doses répétées. Dans certains cas de diphtérie, où le streptocoque engendre des complications, l'association avec le sérum antidiphtérique donne de bons résultats (54).

Le sérum de VINCENT, à la fois antimicrobien et antitoxique, est préparé en injectant à un seul cheval un mélange de races virulentes de streptocoques, isolés de lésions humaines graves. Les germes sont tués et leur émulsion injectée à doses progressives et réitérées, par voie sous-cutanée (43). La récolte se fait par le procédé déjà décrit, après de longs délais d'immunisation et le sérum est purifié par électrodialyse (53).

1/10e de cc. en injection intrapéritonéale doit protéger la souris contre 100 doses mortelles de cultures injectées sous la peau 24 heures après.

Dans les formes moyennes et localisées d'infections streptococciques, on en injecte 40 à 50 cc. par jour, 80 à 100 cc. dans les formes graves, même chez l'enfant ; il est en outre indispensable de poursuivre le traitement 4 jours au moins après la défervescence totale. On utilisera la voie sous-cutanée ou intramusculaire dans les cas légers, la voie intraveineuse dans les cas graves. Il convient d'instituer la sérothérapie antistreptococcique dès le début de la maladie (42), (53).

SÉRUM ANTITÉTANIQUE

Le sérum antitétanique est un sérum thérapeutique proprement dit, antitoxique, préventif et curatif ; il figure au Codex.

C'est un sérum de cheval immunisé contre la toxine de B. tétani. On commence par isoler les spores du B. de Nicolaïer, en inoculant de la terre dans une plaie contuse chez la souris. Le tétanos une fois déclaré, on ensemence de la sérosite sur bouillon peptoné en anaérobiose à + 38°, puis on porte le bouillon à + 100° : seules, les spores tétaniques résistent, les autres germes sont tués. On réensemence sur bouillon, on porte de nouveau à + 100°, ceci

plusieurs fois de suite. Un dernier échantillon de bouillon est ensemencé sur gélose Veillon que l'on aspire dans un tube de Vignal ; le B. tétanique y forme des colonies rayonnantes, faciles à isoler. Ces colonies sont alors repiquées sur bouillon peptoné, ou plutôt sur milieu Martin dans lequel on fait passer un courant d'hydrogène. La toxine atteint son maximum de virulence au bout de 10 jours ; on obtient son anatoxine en la traitant par le formol à + 37° (55).

La préparation du sérum antitétanique a été sans cesse perfectionnée par RAMON. Actuellement, on prend des chevaux vaccinés plus ou moins longtemps auparavant et on les soumet à l'hyperimmunisation, ce qui dure 4 semaines environ : on leur injecte successivement 20, 60, 100 et 160 cc. d'anatoxine au tapioca, puis 250, 350, et 450 cc. de toxine au tapioca. La 1re récolte a lieu 9 jours après la dernière injection d'antigène. Ainsi, les sérums obtenus titrent de 1.500 à 10.000 unités antitoxiques par centimètre cube, taux inconnus avant cette nouvelle technique ; le titre moyen est 4.000 U. A. Autrefois, il fallait 4 à 6 mois d'immunisation et 20 à 60 injections de toxine (50). C'est en partie à l'adjonction de tapioca à l'antigène que l'on doit ces remarquables résultats.

La purification du sérum antitétanique se fait par précipitation au moyen des sels neutres. Le sérum purifié dit « solution d'antitoxine » est préparé avec du sérum de cheval hyperimmunisé, purifié par les sels neutres, et dilué au 1/20e dans l'eau salée à 8 °/oo. On l'additionne de minimes quantités de formol, et on le chauffe une heure à + 55°. Il renferme autant d'antitoxine (3.500 U. A. pour 10 cc.) que le sérum ordinaire, mais 10 à 20 fois moins de protéines. Il possède donc un pouvoir sensibilisant beaucoup moindre, d'où son intérêt en sérothérapie préventive (47).

SANDOR et RICHOU ont proposé un procédé de purification par digestion peptique aux environs de pH 4, pendant 16 à 18 heures, et adsorption par hydrogel d'alumine. Le rendement est de 75 à 80 % de protides actifs, 13 fois plus riches environ en antitoxine tétanique que ceux du sérum originel. Cette opération ne doit pas être effectuée sur des sérums récoltés plus de 15 jours auparavant (49).

Le dosage par floculation est plus délicat que celui du sérum antidiphtérique en raison de l'instabilité de la toxine tétanique. On se contente de mesurer le pouvoir préventif qui est de 1×10^6,

c'est-à-dire que $1/10^6$ de son poids de sérum doit préserver une souris de la dose mortelle de toxine (55).

Les formes commerciales du sérum antitétanique sont les suivantes :

1° Sérum antitétanique ordinaire.

Ampoules de 10 cc. contenant 3.000 U. A. soit 300 U. A. par cc.
Ampoules de 10 cc. contenant 20.000 U. A. soit 2.000 U. A. par cc.

2° Sérum antitétanique purifié :

Ampoules de 10 cc. contenant 3.000 U. A. soit 300 U. A. par cc.
Ampoules de 10 cc. contenant 10.000 U. A. soit 1.000 U. A. par cc.

3° Solution d'antitoxine tétanique.

Ampoules de 10 cc. contenant 3.500 U. A. soit 350 U. A. par cc.

L'injection préventive de sérum antitétanique est indiquée chaque fois que l'on se trouve en présence de plaies des membres par écrasement ; de plaies anfractueuses souillées de terre, de poussières provenant du sol, de débris de fumier, de la vase des eaux ; de plaies avec corps étrangers provenant du sol ou ayant été en contact avec lui (plaies de guerre). La dose habituelle est de 10 cc. soit 3.000 U. A. en injection sous-cutanée, à répéter au besoin 8 jours après si la plaie est très anfractueuse et très souillée. Il est particulièrement indiqué d'employer, soit le sérum purifié, soit la solution d'antitoxine, afin d'éviter les accidents sériques (54).

Les ampoules de 10.000 et 20.000 U. A. sont destinées au traitement du tétanos déclaré car la nécessité est absolue d'utiliser d'emblée des doses massives. Dans le cas d'un tétanos léger, localisé, d'incubation prolongée, on injectera le 1er jour 50 à 150 cc. en deux fois, matin et soir, la moitié sous la peau et la moitié dans les muscles, et autant le lendemain. On réduira progressivement les doses au fur et à mesure des améliorations.

Si l'on se trouve en présence d'un tétanos grave à incubation courte et d'évolution aiguë, ou d'un tétanos viscéral, il faut anesthésier le malade par le chloroforme à la compresse, goutte à goutte, sans dépasser 20 cc., la narcose durant 30 à 45 minutes au maximum. Une demi-heure avant et une demi-heure après, pratiquer une injection intramusculaire ou sous-cutanée de 30 à 60 cc. de sérum. LEHMANN utilise pendant l'anesthésie la voie intraveineuse en goutte à goutte (une goutte par seconde), pour injecter 20 à 30 cc. de sérum chauffé à + 38°, et DUFOUR la voie

intrarachidienne, pour injecter 20 à 50 cc. de sérum chauffé, après soustraction d'une quantité égale de liquide céphalo-rachidien.

Quelle que soit la méthode adoptée, on pratiquera 1 ou 2 séances analogues par jour pendant 2 à 6 jours, puis on poursuivra les injections sous-cutanées ou intramusculaires, et même les intraveineuses lentes, ou les intrarachidiennes, en dehors de toute narcose, tant que cela sera nécessaire (48).

De Fourmestreaux a utilisé dans quelques cas de tétanos sévère, la voie artérielle (carotide ou vertébrale) avec succès. La dose s'est élevée une fois jusqu'à 110 cc. de sérum purifié ; l'artère doit être découverte chirurgicalement (46).

Signalons que l'urotropine modifiant la perméabilité méningée, L. Couvy associe aux injections de sérum antitétanique des injections intraveineuses d'urotropine et obtient 26 guérisons sur 31 cas traités (44).

On peut prolonger l'immunité passive que confère le sérum par l'immunité active que confère l'anatoxine. Chez le blessé non vacciné, il est indiqué de recourir à la séro-anatoxithérapie en injectant en même temps 10 cc., soit 3.500 U. A. de solution d'antitoxine et 1 cc. d'anatoxine, puis à 15 jours d'intervalle, 2 injections de 2 cc. de cette dernière (54). Chez un tétanique en évolution, on administrera une dose unique et massive d'antitoxine tétanique (150.000 U. A.) et simultanément 2 cc. d'anatoxine que l'on continuera à injecter aux doses croissantes de 2, 4 et 6 cc., à 5 ou 6 jours d'intervalle (50).

SÉRUM ANTITYPHIQUE

Le sérum antityphique de Rodet est un sérum thérapeutique proprement dit, antitoxique, qui se prépare comme suit : on emploie des bacilles typhiques cultivés en bouillon peptoné à 20 °/₀₀. Les cultures sont faites dans de petits matras de Pasteur à large surface d'aération, en disposant dans le fond une couche de sciure de bois épaisse de 0,5 cm. Les bacilles que l'on ensemence doivent être récemment isolés et entretenus par de fréquents repiquages sur agar-agar incliné. Après 3 jours passés à l'étuve, le bouillon est filtré sur papier ; le filtrat est la toxine immunisante, il peut contenir quelques bacilles vivants. Un bon produit doit tuer un cobaye de 400 gr. à la dose de 2 cc. par voie intraveineuse.

On immunise le cheval en lui injectant dans les veines des vo-

lumes croissant progressivement jusqu'à 25 cc., à intervalles de 3 à 4 jours au début, de 14 à 15 jours ensuite. L'immunisation optima est atteinte en 3 à 4 mois et à partir de ce moment on n'a aucun intérêt à forcer les doses. Après la saignée, on pratique des injections de rappel, d'abord de 15 cc., en augmentant petit à petit jusqu'à 25 cc. Le sérum est titré soit par injection sous-cutanée préventive, soit par mélange avec la toxine par injection intraveineuse.

Pour avoir toute son efficacité, le sérum doit être administré avant le 11e jour de la période fébrile, en commençant par 15 ou 20 cc. Ces doses peuvent être répétées, mais en général, on les diminue régulièrement (10 et 5 cc.). Trois injections suffisent habituellement, a intervalles de 48 heures.

SÉRUM CONTRE LE TYPHUS EXANTHÉMATIQUE

P. Durand a utilisé contre le typhus exanthématique des mélanges de sérums de convalescents recueillis du 10e au 24e jour de l'apyrexie. Chaque malade a reçu en une seule fois 20 à 25 cc. de ce sérum par voie rachidienne, après soustraction d'une quantité convenable de liquide céphalo-rachidien ; les résultats ont été les mêmes que le sérum soit chauffé ou non à + 58° pendant 30 minutes. L'auteur a obtenu d'excellents résultats chez 12 malades, 2 autres, traités *in extremis*, sont morts (51).

SÉRUMS ANTIVENIMEUX

Les sérums antivenimeux sont des sérums thérapeutiques proprement dits, antitoxiques, actifs chacun contre l'un des principaux groupes de venins de serpents. En effet, ces derniers sont spécifiques au même titre que les toxines bactériennes et chaque Institut Pasteur prépare le sérum indiqué dans son territoire.

1° Sérum antivenimeux E. R. (en ampoules ou en auto-injecteurs de 10 cc.) spécifique vis-à-vis des venins des vipères d'Europe.

2° Sérum antivenimeux A. N. (en ampoules ou en auto-injecteurs de 10 cc.) spécifique vis-à-vis des venins des serpents de l'Afrique du Nord (Céraste).

3° Sérum antivenimeux A. O. (en ampoules ou en auto-injec-

teurs de 10 cc.) spécifique vis-à-vis des venins de serpents de l'Afrique Occidentale et Equatoriale (Sépédon, Bitis).

4° Sérum antivenimeux C. (en ampoules ou en auto-injecteurs de 10 cc.) spécifique vis-à-vis des venins de serpents de l'Inde et de l'Égypte (Naja) (54).

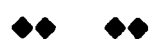
Actuellement, on peut les obtenir de façon très rapide, en immunisant le cheval au moyen des anavenins, préparés comme les anatoxines, par action combinée du formol et de la chaleur. Après un mois et 6 injections d'anavenin, soit au total 300 mmgr., on récolte un sérum utilisable en thérapeutique. Lorsqu'on employait le venin seul, le délai était de 6 mois avec 25 injections (52).

Le titre des sérums antivenimeux doit être tel que 1 cc. protège un lapin contre l'injection intraveineuse dans la même seringue de 1 mmgr. de venin desséché, le tout ayant séjourné auparavant 1/2 heure à l'étuve à + 37° (55).

Ces sérums se conservent pendant plus de 3 ans. Ils sont également présentés sous forme desséchée, dans des flacons bouchés au caoutchouc et représentant 10 cc. de sérum liquide.

Ils s'emploient en injections hypodermiques, à la dose de 10 cc. pour les enfants et les adultes, et de 20 cc. lorsqu'on intervient plusieurs heures après la morsure. Dans les cas graves, il y a intérêt à utiliser la voie intraveineuse. La première précaution à prendre devant une morsure de serpent venimeux, consiste à serrer le membre mordu, avec un lien ou un mouchoir, le plus près possible de la plaie, entre celle-ci et la racine du membre, puis on pratique l'injection.

On doit laver abondamment la morsure en la faisant saigner, puis l'arroser avec une solution récente de chlorure de chaux à 1 gr. pour 60 gr. d'eau distillée, ou de chlorure d'or à 1 gr. pour 100, afin de détruire le venin. On peut faire ensuite un pansement ordinaire. La cautérisation est inutile et l'administration d'ammoniaque ou d'alcool, dangereuse (54).



SODIUM (BENZOATE de)

1. L. DEVOTO. — *Ann. Merck. ed: fr.*, 1933, 201 et 1934, 319.
2. CARLES et MASSIÈRE. — *Com. Soc. de Méd. de Bordeaux*, février 1936, in *P. M.*, 1936, n° 28, 575.
3. L. GOLDKORN. — *P. M.*, 1937, n° 7, 131.

Le benzoate de soude sert :

1° de solubilisant pour la caféine (voir Caféine);

2° d'antiseptique pour le soluté de pepsine préconisé par LOEPER (voir Pepsine);

3° de médicament proprement dit. Ses solutions sont stérilisables pendant 15 minutes à 115°. On les emploie en injections intraveineuses.

Contre les douleurs de l'ulcère gastro-duodénal, on a proposé un traitement quotidien de 2 cc. de solution à 25 % dans l'eau distillée ou dans le sérum physiologique (1).

La tuberculose, les suppurations et gangrènes pulmonaires sont justiciables de doses plus élevées, 5 à 20 cc. de solution à 20 %, espacées de 2 à 4 jours ; on n'obtient de succès que si la quantité injectée est suffisante. Un excès est sans inconvénient car l'acide benzoïque s'élimine aussitôt par la respiration (2), (3).

DELATER et CHAILLY utilisent l'association suivante pour les injections sclérosantes (1) :

Benzoate de soude	20 gr.
Salicylate de soude	40 gr.
Eau distillée, q. s. pour	100 cc.

en ampoules de 2 à 5 cc.



SODIUM (BICARBONATE de)

1. Marc CHAMBON. — *B. S. P.*, 1926, XXXII, 369.
2. A. MIHALOVICI. — *J. P. C.* (8), 1933, XVIII, 418.
3. J. A. LABAT. — *Bull. Soc. Pharm.*, Bordeaux, 1938, LXXVI, 148.

Le bicarbonate de soude, en injections intraveineuses, est em-

ployé pour traiter l'acidose prémonitoire du coma diabétique. La formule classique est celle du Codex.

Bicarbonate de soude	1 gr. 25
Eau distillée, q. s. pour	100 cc.

Faire passer un courant de gaz carbonique dans la solution froide jusqu'à ce qu'elle ne soit plus alcaline à la phtaléine, distribuer en ampoules de 50 à 500 cc. et stériliser par tyndallisation à + 70°.

Le bicarbonate de soude entre dans un nombre considérable de formules de sérums artificiels qui forment un groupe à part étant donné les conditions dans lesquelles on doit les stériliser.

1° Solution de Calvagni :

Chlorure de sodium	0 gr. 75
Bicarbonate de soude	0 gr. 50
Eau distillée, q. s. pour	100 cc.

2° Solution de Locke, N° 1 :

Chlorure de sodium	0 gr. 60
Chlorure de potassium	0 gr. 40
Chlorure de calcium	0 gr. 26
Bicarbonate de soude	0 gr. 003
Eau distillée, q. s. pour	100 cc.

3° Solution de Locke N° 2 :

Chlorure de sodium	0 gr. 90
Chlorure de potassium	0 gr. 0075
Chlorure de calcium	0 gr. 01
Bicarbonate de soude	0 gr. 01
Glucose	0 gr. 10
Eau distillée, q. s. pour	100 cc.
Oxygène à saturation.	

4° Solution de Locke-Carrel :

Chlorure de sodium	0 gr. 65
Chlorure de potassium	0 gr. 03
Chlorure de calcium	0 gr. 10
Bicarbonate de soude	0 gr. 05
Glucose	0 gr. 15
Eau distillée, q. s. pour	100 cc.

5° Solution de Ringer :

Chlorure de sodium	0 gr. 600
Chlorure de potassium	0 gr. 0075
Chlorure de calcium	0 gr. 010
Bicarbonate de soude	0 gr. 010
Eau distillée, q. s. pour	100 cc.

6° Solution de Ringer-Netter :

Chlorure de sodium	0 gr. 70
Chlorure de potassium	0 gr. 03
Bicarbonate de soude	0 gr. 02
Eau distillée, q. s. pour	100 cc.

7° Solution de Sydmann :

Chlorure de sodium	0 gr. 60
Bicarbonate de soude	1 gr.
Eau distillée, q. s. pour	100 cc.

8° Solution de Schnassi :

Chlorure de sodium	0 gr. 65
Chlorure de potassium	0 gr. 03
Chlorure de calcium fondu	0 gr. 10
Bicarbonate de soude	0 gr. 05
Glucose	0 gr. 15
Eau distillée, q. s. pour	100 cc.

Les solutions de bicarbonate de soude se dissocient lorsqu'on les chauffe et d'autant plus que la température est plus élevée ; à + 100°, elles renferment une notable proportion de carbonate neutre. Leur stérilisation par la chaleur est donc assez difficile ; on aura recours pour stériliser le bicarbonate de soude, à la filtration, ou de préférence à la tyndallisation à + 60°, + 70°, en récipients scellés et résistants. On a vu plus haut que c'était le procédé du Codex.

M. Chambon propose de stériliser en vase clos pour éviter le dégagement de gaz carbonique dont l'excès de pression s'oppose à la dissociation des bicarbonates ; l'auteur emploie pour cela des flacons canette, remplis aux 4/5, fermés et stérilisés à l'autoclave à + 120° pendant 20 minutes. La résistance est assez bonne lorsque l'épaisseur du verre est régulière. Après stérilisation, le soluté contient 95 % du bicarbonate théorique. La pression est nulle à l'ouverture du flacon ; on note la présence d'une certaine quantité de carbonate de chaux précipité, dû à la réaction sur le verre calcique. L'auteur préconise donc les flacons en pyrex (1).

Selon Labat, au lieu de traiter la solution par le gaz carbonique comme l'indique le Codex, on peut la verser dans un récipient contenant déjà 0,6 cc. SO^4H^2N ; on mélange et on distribue aussitôt en ampoules de verre neutre que l'on tyndallise. Si l'on désire remplacer le bicarbonate décomposé par l'acide, on en pèsera 1 gr. 30 au lieu de 1 gr. 25. La solution est neutre, parfaitement

stable et ne contient qu'une petite quantité de sulfate de sodium, ce qui n'a aucun inconvénient (3).

MIHALOVICI a indiqué la préparation d'un bicarbonate de soude pur stérilisé qu'on peut ensuite dissoudre aseptiquement dans l'eau stérilisée.

Pour l'obtenir, on se sert d'un simple appareil pour la préparation de l'eau gazeuse, d'un « Sparklet ».

Le flacon en verre, après avoir été lavé avec une solution de savon, puis à l'acide chlorhydrique dilué, et, en dernier lieu, avec de l'eau stérilisée, est rempli avec une solution filtrée contenant 300 gr. de carbonate de sodium cristallisé dans 480 gr. d'eau ; on place alors le flacon dans un vase contenant de l'eau et on le stérilise par action de l'eau en ébullition pendant 45 minutes. On stérilise de cette manière le flacon et la solution qui vont servir à la préparation du bicarbonate.

L'armature métallique est stérilisée, soit à l'étuve à 160° pendant deux heures, soit à l'autoclave à 115° pendant un quart d'heure.

Lors de l'échange du tube CO^2 liquide, le flacon est incliné de manière à ce que l'extrémité du tube au fond du flacon se trouve à l'extérieur du liquide, afin de dégager l'excès de CO^2, sinon une partie du liquide serait rejetée en dehors. Pour cette raison, on laisse le flacon seulement aux trois quarts plein, ou jusqu'au trait marqué à la partie supérieure de l'appareil. L'auteur a employé 780 gr. de solution correspondant à 500 gr. de carbonate de sodium. Le reste est mis en réserve dans des flacons aseptiques, pour une nouvelle opération.

On introduit, de la manière connue, du CO^2 provenant des flacons (dont l'extrémité a été flambée avec quelques gouttes d'alcool) jusqu'à formation totale du précipité et de la réaction du liquide au papier de tournesol. Pendant toute la durée de l'opération, le flacon est souvent agité, et le changement des capsules effectué toutes les 2, 3 heures, en employant ainsi 7 à 8 tubes en tout.

Le précipité ainsi obtenu est porté sur un filtre stérilisé au préalable et lavé à l'eau stérilisée jusqu'à ce que les eaux de lavage ne donnent plus de réaction avec la phénolphtaléine ; il est ensuite séché à l'étuve à 30-35°, en couches minces et dans des conditions aseptiques, puis conservé dans des bocaux stérilisés, à bouchon de verre.

Le rendement, pour la quantité mentionnée, est de 125 gr., la substance obtenue est pure et complètement stérilisée.

Pour préparer des solutions stérilisées injectables de concentration variant jusqu'au maximum de 8 %, on procède comme suit : on prend deux flacons de capacité convenable, dont l'un peut être muni d'un bouchon à l'émeri, et un entonnoir en verre ; on lave le tout avec une solution de savon, puis à l'acide chlorhydrique dilué, et enfin à l'eau distillée.

On remplit d'eau distillée le flacon à bouchon émeri et on le ferme de manière à laisser, entre le bouchon et le goulot du flacon, un fil de coton. Dans le deuxième flacon, on introduit de la moitié aux trois quarts d'eau distillée, on attache l'entonnoir à filtre en papier et on stérilise le tout dans l'autoclave à 115° pendant quinze minutes.

Après refroidissement, on lave le filtre avec toute la quantité d'eau du deuxième flacon ; on porte sur le filtre le bicarbonate de sodium, on verse par-dessus de petites quantités d'eau stérilisée du premier flacon. Le filtrat est reçu dans le deuxième flacon, et afin d'éviter la formation de grumeaux, on remue légèrement de temps à autre l'entonnoir ; de cette manière, par un écoulement lent du liquide, on obtient une dissolution complète, même pour la concentration maxima de 8 %. Ensuite, on filtre à nouveau le tout dans le premier flacon ; on dissout, de cette manière, même les traces de bicarbonate restées non dissoutes de la première opération.

Gardant ainsi toutes les règles de l'aseptie, on obtient une solution injectable de bicarbonate de Na n'ayant subi aucune décomposition (2).



SODIUM (BORATE de)

1. M. LOEPER, A. GARCIN et J. TONNET. — *Com. Soc. Méd. Hôp.*, 26 novembre 1926, in *U. P.*, 1927, LXVIII, 6.
2. R. WEITZ. — *F. M. N.*, 1935, 7.
3. D. BOCCIA et M. BONAFINA. — *Revista Sud-Americana de Endocrin. Immun y Quinotherapia*, 1939, XXII, 695.

Le borate de soude a été préconisé en 1890 par GRASSET contre l'épilepsie et la maladie de Parkinson.

Depuis, il a été employé par LOEPER et ses élèves comme sédatif

des dyspepsies nerveuses, et contre la goutte, le diabète, la maladie de Basedow ; CROUZEL l'a préconisé contre les diarrhées infantiles. Il agit électivement sur le foie, en élevant le rapport azoturique (2). Il est indiqué aussi contre les syndromes douloureux spasmodiques, en particulier ceux de la vésicule et des voies biliaires (3).

Le borate de soude peut être injecté dans les veines. Sa faible solubilité oblige à l'employer sous une forme assez diluée (4,5 %) et par conséquent à injecter à la fois des doses assez considérables de liquide (10 à 30 cc.). La solution se fait à froid et se stérilise à l'autoclave sans plus de précautions. Il faut avoir soin de pousser lentement l'injection (1).

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SODIUM (BROMURE de)

1. A. SÉZARY et F. BENOIST. — *Com. Soc. Méd. Hôp.*, 5 janvier 1928, in *U. P.*, 1928, LXIX, 40.
2. *Ann. de Merck.*, 1935, IV, 337.
3. A. LANDAU. — *P. M.*, 1940, n^os^ 66-67, 697.

Les solutions de bromure de sodium, peu employées en injections autrefois, le sont plus souvent actuellement ; elles doivent être stérilisées à l'autoclave dans des ampoules de verre rigoureusement exempt de plomb. Les injections doivent se faire strictement dans les veines, car la moindre goutte répandue dans le tissu cellulaire sous-cutané y provoque une vive réaction inflammatoire.

SEZARY et BENOIST, reprenant la méthode de LEBEDJEW (Turkestan), traitent les affections dermatologiques prurigineuses (eczéma, urticaire, lichen plan) par des doses quotidiennes de 10 cc. de solution à 10 % dans le sérum physiologique (1).

Un traitement identique permet de réduire la dose et d'augmenter l'efficacité des barbituriques chez les insomniques. Au cours de la maladie de Basedow, une injection quotidienne de :

Bromure de sodium..............................	1 gr.
Glucose..	2 gr.
Eau, q. s. pour..................................	20 cc.

est un excellent adjuvant au traitement habituel avant intervention chirurgicale (3).

Dans les cas d'ulcère gastro-duodénal, l'injection quotidienne de 10 cc. de solution à 10 % additionnée de 0 gr. 001 de sulfate d'atropine amène une sédation notable de la douleur. Dans les cas d'angor de décubitus et d'effort, on peut ajouter de l'ouabaïne à la solution bromoglucosée et dans les cas d'hypertension, 1 cc. de nitrite de soude à 2 % (3). Enfin, l'association bromure de sodium-uréthane, est un anesthésique de base à employer 3/4 d'heure avant une intervention chirurgicale (2) :

Bromure de sodium...............................	10 gr.
Uréthane..	0 gr. 25
Sérum glucose isotonique, q. s. pour..............	20 cc.

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SODIUM (CARBONATE de)

1. P. LEBEAU et G. COURTOIS. — *Trait. Pharm. Chim.*, 1938, I, 344.

Le carbonate de sodium officinal est cristallisé à 10 molécules d'eau et son poids moléculaire est de 286. Il se présente en gros prismes clinorhombiques incolores, s'effleurissant rapidement à l'air en perdant 5 molécules d'eau. Il renferme 37 % de carbonate sec.

Il est soluble dans 1,6 partie d'eau à + 15° et dans 1 partie de glycérine à froid. Sa solubilité dans l'eau est maxima à + 35°. Il est insoluble dans l'alcool (1). Ses solutions aqueuses sont très alcalines et stérilisables à + 100° pendant 30 minutes.

On l'emploie comme anti-anaphylactique, en injections intraveineuses, tous les 2 jours pendant 10 à 12 jours, de 50 à 100 cm^3 de soluté à 2 ou 3 %, et parfois pour scléroser les varices en solution à 10 %, tous les 2 jours, sans dépasser 4 à 12 séances.

Il existe un carbonate de soude sec anhydre, de poids moléculaire = 106, poudre granulée blanche très alcaline, un peu moins soluble dans l'eau que le précédent. Il est inaltérable à l'air sec, mais à l'air humide, il fixe le gaz carbonique et l'eau (1). Si on l'emploie au lieu du sel officinal, on multipliera les quantités à dissoudre par le facteur : 0,37.



SODIUM (CHLORURE de)

1. V. et C. Ciocalteu. — *Travaux Cliniques du Prof. Nanu*, in *Journ. Prat.*, 16 avril 1925.
2. *Form. Pharm. Seine.*
3. R. Debré, J. Marie, de Font-Réaulx et Mlle Jammet. — *Soc. Péd.*, 15 décembre 1936.
4. G. Aymes et H. Pointener. — *Com. Méd. Bouches-du-Rhône*, janvier 1936, in *P. M.*, 1936, n° 23, 464.
5. R. Clément. — *P. M.*, 1937, n° 70, 1251.
6. R. Hirsch. — *Com. Ac. Sc.*, 18 juillet 1938, in *U. P.*, 1938, LXXIX, 298.
7. J. Buvat. — *Thèse Doct. Méd.*, Paris, 1938.

Nombreuses sont les préparations injectables de chlorure de sodium seul, ou associé à d'autres sels.

1° Le Codex de 1908 indiquait un soluté à 7 °/oo remplacé depuis 1925 par le « Soluté de chlorure de sodium isotonique » :

Chlorure de sodium officinal	8 gr.
Eau distillée, q. s. pour	1.000 gr.

Après dissolution, on filtre (de préférence sur double papier filtre), on répartit en récipients préalablement stérilisés et on stérilise à nouveau à + 120° pendant 15 minutes.

Le soluté des hôpitaux militaires est à 7,5 °/oo.

En réalité, ces solutions sont hypotoniques ; l'isotonie serait sensiblement réalisée au taux de 9 °/oo.

La formule du Codex, improprement appelée sérum physiologique, est généralement employée après avoir été réchauffée à + 37° ; soit en injections sous-cutanées de 100 à 300 cc. par jour pour lutter contre l'adynamie des états infectieux, de 500 à 1.500 cc. contre les grandes hémorragies, le choléra et les intoxications au cours des occlusions intestinales ; soit en injections intraveineuses de 500 cc. à 2.000 cc. par jour avec les mêmes indications, soit en injections intraveineuses lentes de 100 à 150 cc. une ou deux fois par jour pendant deux ou trois jours consécutifs, avec une interruption de 24 heures contre les algies morphino-résistantes (cancer) et les hémorragies déclarées ou à redouter. Lorsqu'on emploie cette dernière méthode, il est bon d'acidifier le sérum physiologique, soit par un courant de gaz carbonique, soit par addition d'acide lactique ou d'acide ascorbique, de façon à

amener le pH entre 4,5 et 5. Le temps d'injection est de 45 à 60 minutes pour les doses envisagées (6). En injections épidurales, il permet de traiter les incontinences d'urine et les dysuries des cérébraux (4).

2° Le soluté hypertonique titre 10 % de chlorure de sodium ; on le répartit généralement en ampoules de 10 cc. que l'on stérilise pendant 20 minutes à + 115°. Il est utilisé en injections intraveineuses à la dose de 20 cc. contr ela migraine (7) et aux doses de 20 à 40 cc. pour prévenir et guérir les intoxications des occlusions intestinales, ce traitement devant être poursuivi pendant 48 heures (GOSSET, BINET et PETIT-DUTAILLIS).

Pour éviter les accidents et assurer une bonne diffusion du chlorure de sodium, on recommande de pousser très lentement les injections intraveineuses de ce soluté.

3° En thérapeutique oculaire, on se sert pour les injections sous-conjonctivales, de solutions de chlorure de sodium de 0 gr. 85 à 5 gr. %, les doses injectées variant entre 0,5 et 1 cc. (2).

4° Le Codex mentionne encore le soluté de chlorure de sodium et de sulfate de sodium, avec :

Chlorure de sodium	0 gr. 50
Sulfate de sodium	1 gr.
Eau distillée, q. s. pour	100 cc.

On dissout à froid, on filtre et on stérilise à l'autoclave à + 110° pendant 20 minutes. Ses indications sont les mêmes que celles du soluté de chlorure de sodium isotonique.

5° Les auteurs roumains traitent les intoxications mercurielles par l'alcalinisation massive de l'organisme au moyen de sérum de FISCHER, à la dose quotidienne de 500 à 1.000 cc. (1).

Carbonate de sodium cristallisé à 10 H^2O	10 gr.
Chlorure de sodium	15 gr.
Eau distillée, q. s. pour	1.000 cc.

6° SAINT-GIRONS et BRODIN ont proposé une formule de sérum artificiel salé-sucré (2).

Chlorure de sodium	7 gr.
Lactose ou glucose	5 gr.
Eau distillée, q. s. pour	1.000 cc.

7° Les mélanges de sérum salé à 7 °/oo et de sérum glucosé à 300 °/oo sont employés en instillations intraveineuses continues pour traiter les états de déshydratation des nourrissons : mélange

de 60 cc. de sérum salé et de 10 cc. de sérum glucosé pour Debré et ses collaborateurs ; mélange de 60 cc. de sérum salé et de 30 cc. de sérum glucosé pour Lesné et ses collaborateurs.

Le débit est de V à XV gouttes à la minute ; le goutte à goutte est laissé en place pendant 3 jours en moyenne et la quantité injectée, égale à la quantité de lait que l'enfant prendrait normalement par la bouche, varie de 400 à 800 cc. par 24 heures. Durant ce temps, le malade est maintenu dans un état d'immobilité absolue et Lesné et Germaine Dreyfus-Sée, pour appliquer cette thérapeutique, ont disséqué les veines du bras et immobilisé l'articulation du coude dans une gouttière en duralumin (3), (5).

8° Le liquide de Ringer (*), couramment utilisé en physiologie pour les perfusions, a été employé pour combattre l'anémie et comme stimulant nerveux et cardiaque (2).

Additionné de 5 à 8 % de glucose, il sert au traitement des états de déshydratation des nourrissons, comme il vient d'être indiqué plus haut (5). Sa formule est la suivante :

Chlorure de sodium	9 gr.
Chlorure de potassium	0 gr. 42
Chlorure de calcium crist.	0 gr. 24
Bicarbonate de soude	0 gr. 15
Glucose	1 gr.
Eau distillée, q. s. pour	1.000 c.

à répartir en ampoules de 10 cc.

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SODIUM (CHOLALATE de)

Synonyme : **Cholate de sodium.**

1. G. Carrière et E. Gérard. — *Bull. Ac. Méd.*, 1932, CVII, 119.
2. Weitz. — *F. M. N.*, 1935, 119.

Le sel de sodium de l'acide cholalique, produit d'hydrolyse des acides biliaires, est blanc, cristallisé, soluble dans l'eau dont il abaisse la tension superficielle. Il agit comme un véritable hypotenseur que Carrière et Gérard ont employé en mettant à

(*) Nous donnons à l'article Sodium (Bicarbonate de) la liste d'une série de solutés contenant à la fois du chlorure de sodium et du bicarbonate de sodium et qui, de ce fait, ont un mode de stérilisation particulier.

profit l'observation de Chauffard d'après laquelle la tension artérielle est généralement abaissée au cours des ictères (1), (2).

On injecte tous les jours profondément sous la peau, 2 cc. de solution à 2 %, soit 0 gr. 04.

Lorsqu'un abaissement suffisant de la pression artérielle est obtenu, on se contentera d'injections bi- ou tri-hebdomadaires.

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SODIUM (CINNAMATE de)

Synonyme : **Hétol.**

1. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, II, 72.

Le produit officinal se présente en cristaux incolores cristallisés avec 0,5 molécule d'eau qu'ils perdent à + 110°. Il est soluble dans 14 parties d'eau à + 15°, plus soluble dans l'eau à + 100° ; il est décomposé par les acides même faibles, tels que le gaz carbonique (1). Ses solutions aqueuses sont légèrement alcalines, d'où leur incompatibilité avec la stovaïne, etc., si l'on ne prend pas soin de les neutraliser. Elles sont stérilisables à + 100° pendant 30 minutes.

On l'emploie contre la tuberculose pulmonaire, en injections sous-cutanées, aux doses progressives de 0 gr. 05 à 0 gr. 30 ou en injections intraveineuses aux doses progressives de 0 gr. 001 à 0 gr. 025, en faisant une injection tous les 2 ou 3 jours.

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SODIUM (CITRATE de)

1. L. Normet. — *Bull. Ac. Méd.*, 2 décembre 1924.
2. L. Normet. — *P. M.*, 1925, n° 3, 37.
3. A. Coyon et P. Marty. — *Bull. Soc. Thér.*, 14 janvier 1925, n° 1, p. 13.
4. M. Renaud. — *Bull. Ac. Méd.*, 11 mai 1926.
5. J. Leriche. — *Com. Soc. Thér.*, juin 1926, in *U. P.*, 1926, LXVII, 263.
6. S. Tsovaru et D. Mavrodin. — *P. M.*, 1926, n° 64, p. 986.
7. R. A. F. Morisson. — *Arch. Méd. et Pharm. Milit.*, 1930, XCII, 87.
8. P. Dervillié. — *Thèse Bordeaux*, 1930.
9. Th. Bertrand-Fontaine et J. L'Hirondel. — *Bul. Gén. Thér.*, 1936, n° 9, in *U. P.*, 1937, LXXVIII, 267.

On emploie le sel trisodique à deux molécules d'eau de cristallisation ; il a l'aspect de petits cristaux ou de poudre microcristalline

blanche, granuleuse, de saveur acide, soluble dans 1,3 partie d'eau à + 25° et dans 0,6 à l'ébullition. Ses solutions sont alcalines au tournesol et sont stérilisables à l'autoclave à + 115° pendant 15 à 20 minutes.

Il a été étudié par NORMET qui a précisé le mécanisme de son action biologique (1).

Il entre dans la composition de nombreux solutés injectables, soit seul, soit associé à d'autres sels.

1° Comme antianémique :

Citrate de soude	1 gr.
Eau, q. s. pour	10 cc.

On pratique deux injections intraveineuses par semaine, les doses croissant progressivement jusqu'à 1 gr. ou 1 gr. 20 ; le traitement comprend 7 à 8 injections suivies, s'il y a lieu, d'une deuxième série après un court intervalle de repos. Il est nécessaire de procéder avec une extrême prudence pour éviter les accidents de choc, de pousser l'injection avec lenteur, de ne jamais employer de doses trop élevées, de diminuer au besoin la concentration de la solution et même quelquefois d'injecter le liquide en deux fois à quelques minutes d'intervalle. Mieux vaut s'abstenir chez les sujets très anémiés et profondément intoxiqués (8).

2° Comme hémostatique :

Citrate de soude	30 gr.
Eau distillée	100 gr.

à répartir en ampoules de 30 cc.

L'injection est pratiquée dans les muscles fessiers, 15 cc. de chaque côté ; elle peut être rendue moins douloureuse en la faisant précéder d'une injection de novocaïne (8). La voie intraveineuse arrête beaucoup plus rapidement les accidents hémorragiques et doit être préférée (9).

3° Dans les épanchements pleuraux :

On met ici à profit ses propriétés anticoagulantes dans les collections pleurales qu'on ne peut évacuer en raison des flocons fibrineux qui obstruent la lumière du trocart ; selon le volume de l'épanchement, on injecte de 2 à 30 cc. de solution de citrate de soude à 10 %, préalablement tiédi au bain-marie (3).

4° Dans les hémorragies graves, la formule complexe suivante

permet d'obtenir un nombre élevé de réanimations et de survies :

Citrate de soude	22 gr.
Citrate neutre de calcium	3 gr. 50
Citrate neutre de magnésium	4 gr. 50
Citrate de fer ammoniacal	1 gr.
Citrate de manganèse	0 gr. 20
Eau distillée, q. s. pour	1.000 cc.

à répartir en ampoules de 20 c.

Pour l'usage, on dilue le contenu d'une ampoule dans un litre de solution de chlorure de sodium à 7 °/₀₀ et on injecte dans les veines 500 à 1.000 cc. du mélange chauffé à + 39°. On admet que la dissociation facile des citrates en solution étendue est favorable à la stimulation du rythme cardiaque, à l'hématose et à la régénération globulaire (7).

5° Comme antihémorragique également, divers auteurs ont employé avec succès l'association du citrate de soude à forte dose qui diminue la viscosité et augmente la coagulabilité du sang, au chlorure de magnésium qui est hypotenseur :

Citrate de soude	30 gr.
Chlorure de Magnésium	10 gr.
Eau distillée	100 gr.

On fait une injection intraveineuse de 15 à 30 cc. que l'on pousse lentement. La dose de 30 cc. pourrait sans inconvénients être largement dépassée (4), (6).

6° LERICHE (de Joigny), utilise contre le cancer la même association : citrate de soude chlorure de magnésium, en y introduisant le citrate de magnésium qui, d'après NORMET, évite les phénomènes de choc et le citrate de manganèse pour éviter les phénomènes de mutations :

Citrate de soude	0 gr. 90
Citrate de magnésium	0 gr. 10
Citrate de manganèse	0 gr. 01
Chlorure de magnésium	0 gr. 50
Tartrate ferrico-potassique	0 gr. 02
Eau distillée, q. s. pour	5 cc.

pour une ampoule.

Cette préparation est administrée exclusivement par voie intraveineuse ; la dose à injecter croît suivant l'ancienneté, l'ampleur et l'évolution du néoplasme, jusqu'à 25 cc. en une fois. Les doses élevées ont été injectées 2 à 3 fois par semaine sans accident. On pratique ainsi sans interruption une série d'injections jusqu'à la

dose totale de 30 à 40 gr. de chlorure de magnésium. On observe un repos de 15 jours à 1 mois, puis on reprend le traitement (5).

7° Comme antianémique, NORMET a établi la formule ci-dessous qui est en somme le prototype de celles que nous venons de passer en revue :

Citrate de soude	50 gr.
Citrate de magnésium	20 gr.
Tartrate ferrico-potassique	3 gr.
Citrate de manganèse	1 gr.
Eau distillée, q. s. pour	1.000 cc.

Chez l'adulte, et en cas d'urgence, on en injecte dans les veines 15 à 20 cc. selon le poids du malade. En dehors des cas d'urgence, les injections sous-cutanées à la dose de 10 à 20 cc. par jour, pendant 10 jours, seront tout à fait inoffensives (2).

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SODIUM (FORMALDÉHYDE — SULFOXYLATE de)

1. LEBEAU et COURTOIS. — *Trait. Pharm. Chim.*, 1938, I, 143.
2. E. HUG, A. J. LLACER et F. RUIZ. — *Com. Soc. Biol. Buenos-Ayres* du 29 sept. 1934, in *U. P.*, 1935, LXXVI, 206.
3. P. HARVIER. — *Paris Méd.*, 8 juin 1935, in *U. P.*, 1935, LXXVI, 355.

En faisant agir le formol sur le bisulfite de sodium, on obtient le formaldéhyde sulfonate de sodium, soluble dans l'eau. Ce corps, traité par la poudre de zinc, en milieu sulfurique dilué, est transformé en dérivé de l'acide formaldéhyde hydrosulfureux ou formaldéhyde-sulfoxylique (1).

ROSENTHAL a montré que le sel de sodium de cet acide était efficace pour traiter l'intoxication mercurielle aiguë et aussi l'intoxication cyanhydrique. Il conseille d'employer des solutions fraîchement préparées : la solution à 20 % s'altère vite dans des tubes ouverts à l'air, mais se conserve bien en ampoules fermées (2).

Voici quelle est, selon HARVIER, la technique à suivre. Après lavage de l'estomac, avec une solution de formaldéhyde sulfoxylate de sodium, faire une injection intraveineuse de 10 gr. de ce corps dissous dans 100 à 200 cc. d'eau distillée. Cette injection doit être poussée avec lenteur en 20 à 30 minutes. Dans les cas graves, on renouvelle cette injection à la dose de 5 à 10 gr. quatre à cinq heures après ; le renouvellement de l'injection s'impose si on cons-

tate à ce moment-là que le pouvoir réducteur du sérum est faible (3).

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SODIUM (GLYCÉROPHOSPHATE)

1. Lebeau et Courtois. — *Trait. Pharm. Chim.*, 1938, 1944.
2. T. Luccherini. — *Nuovo Trattamento delle artropatie croniche*, Rome 1937.

Le glycérophosphate de soude officinal, mélange en proportions variables des isomères et cristallisés respectivement avec $6H^2O$ et $5H^2O$ doit contenir au moins 66 % de sel anhydre. Il est cristallisé en aiguilles ou en tablettes incolores, parfois efflorescent, très soluble dans l'eau, insoluble dans l'alcool (1). Ses solutions alcalines au tournesol se dissocient à 120° et même à 100° par chauffage prolongé. On les stérilisera donc par tyndallisation à + 70° + 80° ou par chauffage au bain-marie bouillant pendant 30 minutes.

Si l'on veut réaliser une stérilisation plus complète, on peut effectuer 3 chauffages de 20 minutes à + 100° à un jour d'intervalle.

C'est un reconstituant à injecter par voie hypodermique sous forme d'un des solutés suivants :

Glycérophosphate de soude	10 gr.
Eau distillée, q. s. pour	100 cc.

Dose : 1 à 10 cc.

Glycérophosphate de soude	āā 10 gr.
Glycérophosphate de lithine	
Eau distillée, q. s. pour	100 cc.

Dose : 2 à 4 cc.

Il peut servir au traitement des arthropathies chroniques non vertébrales, sous forme d'injections intraveineuses de solution à 25 %, pure ou additionnée de strychnine et de méthylarsinate de soude. On pratique chaque année 2 ou 3 séries d'injections quotidiennes pendant 20 jours (2).

Enfin, le glycérophosphate de soude entre dans la composition du soluté de sulfate de strychnine composé du Codex (voir Strychnine).



SODIUM (HYPOSULFITE de)

Synonyme : **Thiosulfate de soude.**

1. LUMIÈRE et CHEVROTIER. — *C. R.*, 1920, CLXXI, 741.
2. P. RAVAUT. — *Prat. Méd. franç.*, février 1925, in *U. P.*, 1925, LXVI, 303
3. ANONYME. — *The Prescriber*, 1926, XX, 8.
4. LEBEAU et COURTOIS. — *Trait. Pharm. Chim.*, 1938, I, 179.
5. ARTAULT DE VEVEY. — *Com. Soc. Thér.*, 13 février 1929, in *U. P.*, 1929, LXX, 104.
6. J. BENNEKEN. — *Journ. Pharm. Bel.*, 7 mars 1933, in *U. P.*, 1934, LXXV, 36.
7. J. WALL. — *P. M.*, 7 février 1934.
8. *Form. Pharm. Seine.*
9. A. SEZARY. — *P. M.*, 1938, n° 20, 380.

Parmi les nombreux hydrates que fournit l'hyposulfite de soude, le sel officinal est celui qui renferme 5 molécules d'eau de cristallisation. Il est stable à l'air jusqu'à 33°, température au-dessus de laquelle il commence à s'effleurir. Il a l'aspect de prismes rhomboïdaux obliques, incolores, solubles dans moins de leur poids d'eau à + 15°, insolubles dans l'alcool. La solution aqueuse exposée à l'air libre s'altère lentement à froid, portée à l'ébullition, elle se décompose rapidement (4).

Le chauffage à + 120° pendant 20 minutes décompose l'hyposulfite si l'on ne prend pas la précaution d'y ajouter une solution tampon de phosphates de Sörensen au pH = 7,4 :

Phosphate monopotassique à 9 gr. 078 °/₀₀ dans l'eau bidistillée	19 cc.
Phosphate disodique à 11 gr. 876 °/₀₀ dans l'eau bidistillée	81 cc.

On élimine ainsi en même temps l'alcalinité du verre. Avant de fermer les ampoules, il est prudent de nettoyer le col par un jet de vapeur car l'hyposulfite restant adhérent serait décomposé lors de la fermeture (6). RAVAUT recommande de ne pas dépasser + 105° dans la stérilisation des solutions simples d'hyposulfite de soude (2).

Ce sel est employé :

1° Contre les formes cutanées des intoxications arsenicales et les ictères dus au novarsénobenzol. On fait des injections intraveineuses de solution à 5 %, à des doses variant de 0 gr. 30 à

1 gr. 80 par jour. Contre les intoxications mercurielles, les résultats sont peu satisfaisants, sauf les cas de stomatites (3).

2° Contre l'intoxication oxycarbonée, on a eu recours à l'injection intraveineuse de 25 cc. de solution à 10 % (5).

3° Contre l'intoxication cyanhydrique et cyanurée, après avoir commencé le traitement par l'injection intraveineuse, soit de bleu de méthylène, soit de nitrite de soude, on continuera par l'hyposulfite de soude, dont l'inconvénient est de n'agir qu'au bout d'une demi-heure ; on injecte par la même voie 5 à 20 cc. de solution récente à 20 % ; la dose maxima ainsi introduite est de 15 gr. (7).

4° Pour lutter contre le choc anaphylactique pouvant se produire au moment de la deuxième injection d'un sérum antitoxique, LUMIÈRE et CHEVROTIER ont proposé d'y ajouter alors de l'hyposulfite de sodium qui empêcherait sans doute la floculation dans les capillaires (1).

5° Enfin, comme traitement de l'urticaire, RAVAUT injecte dans les veines, tous les deux ou trois jours, 5 à 15 cc. de solution d'hyposulfite à 20 %, stérilisée sans dépasser + 105°. On continue par séries de 10 piqûres espacées de quelques jours de repos, ou bien pendant trois jours par semaine, et cela pendant des mois, s'il s'agit de désensibiliser le malade (2).

Dans les cas de prurit anal, SEZARY pratique comme traitement adjuvant une série de 10 intraveineuses de solution d'hyposulfite à 20 % (9).

La formule suivante est spécialement indiquée contre l'eczéma :

Hyposulfite de soude	5 gr.
Pilocarpine (chlorhydrate)	0 gr. 005
Eau distillée, q. s. pour	20 cc.

pour une ampoule.

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SODIUM (IODURE de)

1. J. DECOURT, L. MEYER et M. DEMANGE. — *Soc. Thér.* du 13 mars 1935, in *U. P.*, 1935, LXXVI, 234.
2. WEITZ. — *F. M. N.*, 1935, 363.
3. A. et B. LAFAY. — *Com. Ac. Sc.*, 24 mai 1937, in *U. P.*, 1937, LXXVIII, 333.

L'iodure de sodium s'emploie soit en injections sous-cutanées ou intramusculaires au taux de 1 %, en ampoules de 10 ou 20 cc.

comme sédatif de la douleur dans les algies rebelles, soit en injections intraveineuses au taux de 5 ou, plus rarement, de 10 % ; également en ampoules de 10 ou 20 cc., comme antiinfectieux.

Il sera bon d'ajouter à ces dernières solutions 0 gr. 01 à 0 gr. 02 d'hyposulfite de soude. De plus, comme elles sont douloureuses à l'injection, on les additionne de chlorure de sodium ; on augmentera la tolérance de l'organisme en employant comme solvants des solutés sucrés concentrés, par exemple celui de Lo Monaco à 50 % de saccharose. La stérilisation se fera à l'autoclave dans des verres rigoureusement privés de plomb. Notons que si l'iodure de sodium renferme des traces d'iode ou s'il est exposé à la lumière, ce qui provoque la mise en liberté d'un peu d'iode, il est incompatible avec les alcaloïdes, la spartéine par exemple.

Pour renforcer l'action antirhumatismale de l'iodure de sodium, Decourt, Meyer et Demange lui ont associé l'hyposulfite de magnésium qui, en plus du soufre, apporte le pouvoir neurosédatif de l'ion métallique. La formule est la suivante :

Iodure de sodium	5 gr.
Hyposulfite de magnésium	5 gr.
Eau distillée, q. s. pour	100 cc.

On la répartit en ampoules de 10 ou 20 cc., cette solution est parfaitement stable et absolument incolore. On en fait 8 à 12 injections intraveineuses de 10 ou 20 cc. espacées de un à deux jours (1).

La « Néoriodine » est une combinaison d'iodure de sodium avec l'éther glycéroricinoléique iodé contenant 44 % d'iode dissimulé. Elle est soluble dans l'eau, c'est un agent de médication iodée ne provoquant pas d'iodisme. On fait tous les deux jours une injection intramusculaire intraveineuse de solution à 10 %, en débutant par 1 cc. et en augmentant progressivement jusqu'à 5 et même 10 cc. (2).

A. et B. Lafay ont étudié une solution d'iodure de sodium radioactive qui donne, contre les rhumatismes des résultats aussi bons que ceux du mésothorium, du thorium X ou du radon, avec l'avantage de ne pas altérer la formule sanguine. En outre, cette méthode est la seule qui permette d'amener sans inconvénients des rayons β au contact des tissus cancéreux.

Il suffit d'exposer la solution à radioactiver au rayonnement d'un tube renfermant 2 à 3 microgrammes de radium, enveloppé de glucinium pulvérisé, bien tassé, qui constitue une source per-

manente et pratiquement inépuisable de neutrons. Pour obtenir des effets aussi intenses que possible, il convient, comme l'ont établi les travaux de l'école italienne, d'enfermer la source et les objets à irradier, dans un bloc épais de paraffine (3).

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SODIUM (NITRITE de)

1. L. Cheinisse. — *P. M.*, 1924, n° 64, 671, in *B. S. P.*, 1925, XXXII, 124
2. J. Wall. — *P. M.*, 7 février 1934, in *U. P.*, 1934, LXXV, 270.
3. P. Harvier. — *Paris Méd.*, 8 juin 1935, in *U. P.*, 1935, LXXVI, 355.

Le nitrite de soude, sel cristallisé, déliquescent, parfois légèrement teinté de jaune, est très soluble dans l'eau. Ses solutions aqueuses sont stérilisables à + 100° pendant 30 minutes et même à l'autoclave à + 110° (2). Leur taux habituel est de 1 à 2 % ; elles s'altèrent rapidement et Cheinisse recommande de n'en préparer que de petites quantités à la fois dans des ampoules de verre jaune (1).

On en injecte sous la peau ou dans les veines 0,5 à 1 cc. par jour, en séries de 10 jours séparées par un intervalle égal de repos, contre les douleurs fulgurantes du tabes. Des doses beaucoup plus considérables, 5, 10 et même 20 cc. de solution à 2 % sont employées par voie veineuse pour lutter contre les intoxications cyanhydrique et mercurielle. L'injection est alors précédée d'une inhalation de nitrite d'amyle et suivie d'une injection également intraveineuse de 20 cc. d'hyposulfite de soude à 30 %. On peut répéter ce traitement plusieurs fois si c'est nécessaire ; cependant, chez l'homme, la dose totale de 1 gr. de nitrite de soude ne saurait être dépassée sans précaution, bien qu'on ne connaisse pas encore exactement la dose maxima qu'il puisse tolérer sans danger. Cette thérapeutique constitue la méthode de Hug (2), (3).

Quelquefois on associe au nitrite de soude l'extrait de gui dans la formule suivante :

Nitrite de soude	1 ou 2 gr.
Extrait de gui	5 gr.
Glycérine	15 gr.
Eau distillée, q. s. pour	100 cc.

On tyndallise de préférence vers 60°.

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SODIUM
(Paradiméthylamino-orthotoluyl phosphinate de)

1. R. Weitz. — *F. M. N.*, 1935, 442.

C'est un tonique général stimulant les échanges tissulaires, employé contre l'anémie, l'impuissance, l'asthénie, sous forme de solution à 1 ou 2 %, en injections sous-cutanées, par séries de 20, à la dose de 0,5 à 1 cc. selon l'âge.

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SODIUM (SALICYLATE de)

1. Bazelis. — *P. M.*, 23 avril 1924.
2. A. Stère. — *P. M.*, 19 décembre 1924, in *U. P.*, 1925, LXVI, 209.
3. Ch. Foix, J. A. Chavany et M. Lévy. — *Com. Soc. Neur.*, 4 novembre 1926, in *U. P.*, 1927, LXVIII, 83.
4. R. Tournay. — *Ann. Labo. Clin.*, 1928, XXXV, 113.
5. A. Lequen. — *Thèse Doct. Méd.*, Paris, 1928.
6. M. Mevel. — *Bul. Ac. Méd.*, 1929, CII, 285.
7. Couvy et Popoff. — *Bul. Ac. Méd.*, 1929, CII, 51 et 1931, CV, 163.
8. G. Marchal, G. M. Lemoine et Geneslay. — *Prog. Méd.*, 26 janvier 1935, in *U. P.*, 1935, LXXVI, 235.
9. L. Filderman. — *Bul. Soc. Thér.*, 1939, LXXIV, 149.
10. P. G. — *P. M.*, 1939, n° 77, 1429.
11. G. et J. Delater. — *P. M.*, 1940, n° 5, 54.
12. J. G. Velasquez. — *La Prensa Medica Argentina*, 1940, n° 21, 1073, cité par M. D., *P. M.*, 1940, n° 73-74, 772.

Le salicylate de soude officinal est le sel anhydre, soluble dans l'eau, l'alcool et la glycérine. Il s'altère peu à peu à l'air et à la lumière en devenant rose, puis brun ; les alcalis favorisent cette altération. Les solutions devront donc être stérilisées en l'absence d'air, c'est-à-dire que les ampoules seront en verre neutre coloré, et remplies le plus possible ; l'un de nous a observé plusieurs fois un léger jaunissement des solutions de salicylate après leur passage à l'autoclave. Toutefois, quand on opère dans de bons verres, cette coloration est peu sensible et l'altération paraît tout à fait négligeable.

Le Codex indique une solution de salicylate pur à 20 %, et une solution de salicylate à 10 %, avec 10 % de glucose et prescrit de

les stériliser par tyndallisation à + 70°. C'est également le procédé à adopter lorsqu'on introduit de la cocaïne dans la formule (voir plus loin).

L'indication majeure du salicylate de soude injectable est le rhumatisme articulaire aigu et ses complications. On emploie en injections intraveineuses de préférence la solution glucosée pour éviter la sclérose des veines (R. BÉNARD), à la dose habituelle de 10 cc.

Le salicylate en solution isotonique, c'est-à-dire à 23 gr. 20 °/oo peut être employé en injections sous-cutanées, ce qui est particulièrement intéressant dans le cas de sujets intolérants pour le médicament administré par les autres voies. Commencer par 2 cc., augmenter très progressivement d'abord de 5 en 5 cc., puis de 10 en 10 cc. jusqu'à 100 cc. quantité qu'il ne faut dépasser qu'avec prudence, quoique certains malades puissent supporter une dose de 200 cc. Ces injections sont indolores (12).

MARCHAL et ses collaborateurs (8) ont montré qu'en plus de ses propriétés antichoc, le mélange d'hyposulfite de magnésium et de chlorure de calcium permet de fixer les plus fortes doses de salicylate de soude sur le myocarde. Ils utilisent cette association en clinique en injectant 5 à 10 cc. de solution de salicylate-glucose mélangés extemporanément avec :

Hyposulfite de magnésium	0 gr. 800
Chlorure de calcium	0 gr. 075
Sérum physiologique	1 cc.

STÈRE emploie la solution suivante récemment préparée :

Salicylate de soude	20 gr.
Cocaïne (chlorhydrate)........................	0 gr. 75
Eau distillée, q. s. pour	100 cc.

à répartir en ampoules de 10 cc. et à stériliser par tyndallisation à + 70°.

On fait, au voisinage des articulations ou sur le trajet des nerfs, des injections de 10 à 15 cc. sous-cutanées ou intramusculaires, répétées deux à trois fois, à trois ou quatre jours d'intervalle. Cette méthode est indiquée dans les cas d'insuccès ou d'intolérance de la médication salicylée par voie gastrique, pour lutter contre le rhumatisme aigu musculaire ou articulaire et le rhumatisme chronique. Elle est inefficace ou même dangereuse au cours du rhumatisme polyarticulaire aigu, le rhumatisme blennorragique ou tuberculeux (2).

Certaines affections nerveuses sont également des indications de la solution de salicylate-glucose : FOIX et ses collaborateurs constatent une amélioration de la sclérose en plaques après deux séries de 20 injections quotidiennes de 5 cc. de ce soluté, séparées par un intervalle de 10 jours (3) ; d'autre part, LEQUEN a soigné avec succès les formes parkinsonniennes de l'encéphalite épidémique au moyen de trois séries de 12 injections intraveineuses journalières, de 20 cc. chacune, séparées également par des intervalles de 10 jours (5). La forme bénigne de la chorée de Sydenham est justiciable d'un traitement par 1 ou 2 injections intraveineuses quotidiennes de 10 cc. de salicylate glucose (10).

MEVEL traite les affections pulmonaires (pneumonies, bronchopneumonies, bronchites, tuberculose pulmonaire) par des injections intramusculaires du soluté :

Salicylate de soude	āā 0 gr. 10
Glucose	
Eau distillée, q. s. pour une ampoule de 2 cc.	

Les injections sont faites dans la masse musculaire de la fesse, il n'y a pas de réaction locale, sauf une légère sensation de chaleur ne durant que quelques minutes et très facilement supportée. La solution à 0 gr. 10 pour 1 cc. est plus douloureuse (6). COUVY et POPOFF emploient pour le même usage des injections intraveineuses de solution à 1 p. 30 (7).

Enfin, le salicylate de soude est un excellent agent sclérosant des varices que SICARD a préconisé le premier (1), (4) : il faut injecter directement dans la veine variqueuse, sans transpercer le vaisseau de part en part, l'une des solutions suivantes :

1° à 20 %.

Salicylate de soude	1 gr.
Eau distillée, q. s. pour	5 cc.

5 et 10 cc. par séance.

2° à 30 %.

Salicylate de soude	1 gr. 50
Eau distillée, q. s. pour	5 cc.

2 à 6 cc. par séance.

3° à 40 %

Salicylate de soude	2 gr.
Eau distillée, q. s. pour	5 cc.

2 à 3 cc. par injection et par séance.

Ces trois solutions sont suffisantes pour la pratique courante, il sera toujours facile de les diluer avec de l'eau distillée stérile si c'est nécessaire.

Bazelis d'une part (1), et Filderman d'autre part (9), indiquent le mode opératoire suivant : le variqueux reste debout quelques minutes, la veine variqueuse se dilate ; un lien caoutchouté placé au-dessus du genou emprisonne alors le sang dans la veine sous-jacente, puis on fait coucher le sujet, l'aiguille est enfoncée, le lien enlevé et l'injection est poussée. Il ne se produit aucune réaction d'ordre général.

Pour scléroser les hémorroïdes, injecter d'abord 2 cc. de novocaïne à 1 %, puis 2 cc. de salicylate de soude à 20 ou 25 %; pour scléroser les goitres, sauf les adénomes malins, injecter à chaque séance, 1 à 2 cc. de salicylate à 30, 40 ou 50 % ; il y a formation de noyaux fibreux et oblitération des poches kystiques (9).

G. et J. Delater traitent les varices à l'aide de mélanges complexes préparés extemporanément dans la seringue même :

1° Mélange S. B. M.

Salicylate de soude à 20 %	1 à 2 cc.
Benzoate de soude à 40 %	0.5 à 1 cc.
Morrhuate de soude à 5 %	1 à 2 cc.

Les solutions doivent être aspirées dans la seringue selon l'ordre ci-dessus. Les doses indiquées sont celles du début ; on les augmentera progressivement de façon à atteindre :

Salicylate de soude à 40%	3 à 5 cc.
Benzoate de soude à 40 %	2 à 3 cc.
Morrhuate de soude à 5 %	2 à 3 cc.

On peut pratiquer 4 à 5 injections en une seule séance. 3 à 4 séances suffisent pour les varices les plus nombreuses et les plus diversement réparties. Si les trajets variqueux sont particulièrement résistants, on fera un traitement complémentaire avec :

2° Mélange G. S. B.

Glycérine pure	3 à 5 cc.
Salicylate de soude à 30 ou 40 %	2 à 4 cc.
Benzoate de soude à 40 %	1 à 3 cc.

Il faut introduire dans la seringue la glycérine préalablement chauffée au bain-marie à 50 ou 60°, puis le salicylate et le benzoate, et agiter énergiquement. Répéter la séance 15 jours plus tard avec 2, 3, 4 injections si la première n'a pas produit l'effet désiré (11).

Rappelons que la glycérine et les solutions de benzoate de soude sont stérilisables à + 115° pendant 15 minutes, et celles de morrhuate de soude par addition de 0,5 % d'acide phénique.

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SODIUM (SAVONS de)

Synonymes : **Oléate de sodium. — Ricinoléate de sodium.**

1. M. Renaud. — *C. R. Soc. Biol.*, 1930, CIV, 78 79.
2. M. Renaud. — *Com. Soc. Méd. Hôp.*, 2 mai 1930, in *U. P.*, 1930., LXXI, 202.
3. M. Picon. — *J. P. C.* (8), 1930, XII, 481.
4. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*

Les savons de sodium injectables sont :

1° L'oléate de sodium, poudre blanc jaunâtre, soluble dans 10 parties d'eau froide, dans l'alcool, l'éther et le benzène (4). Il est à notre avis stérilisable comme Picon l'indique pour le ricinoléate de sodium (voir plus loin 2°). Injecté par voie intraveineuse, il détermine un abaissement lentement progressif de la tension artérielle, pouvant atteindre 5 et même 10 divisions du manomètre de Pachon (1). On peut l'employer couramment dans le traitement de l'hypertension, en solution à 2 % dans le sérum physiologique à la dose de 2 à 5 cc. par voie intraveineuse (2).

2° Le ricinoléate de sodium dont Picon a indiqué une formule de soluté injectable isotonique :

Ricinoléate de sodium incomplètement neutralisé	10 gr.
Chlorure de sodium	7 gr.
Eau distillée, q. s. pour	1.000 cc.

On dissout à une douce chaleur, on filtre sur papier, puis on répartit en ampoules de 10 cc. qu'on stérilise à + 120° pendant 30 minutes.

Après refroidissement le liquide est parfaitement limpide ; il se trouble ensuite légèrement et peut même, après plusieurs mois, contenir quelques flocons qui surnagent, mais qui disparaissent très facilement en faisant tiédir la solution.

Ce soluté, à peine alcalin et sensiblement isotonique, est nettement hémolytique ; toutefois l'hémolyse est faible et ne peut être constatée qu'après 5 minutes de contact avec les hématies. Il est injectable à la dose de 10 cc. par jour, par voie intraveineuse. Di-

vers travaux ont montré que les toxines microbiennes pouvaient perdre leur pouvoir toxique par l'action des savons (3).

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SOUFRE

et ses dérivés organiques

1. J. Carles et F. Leuret. — *Bull. Gen. Thér.*, février 1931, in *U. P.*, 1931, LXXII, 235.
2. J. Chevalier. — *Com. Ac. Méd.*, 4 juin, in *U. P.*, 1935, LXXVI, 325.
3. F. Pancier. — *B. S. P.*, 1935, XIII, 400.
4. R. Weitz. — *F. M. N.*, 1935, 392.
5. R. Weitz. — *F. M. N.*, 1935, 410.
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SOUFRE

Le soufre métalloïdique n'a guère été employé qu'en suspension huileuse. L'ancienne formule de Bory était la suivante :

Soufre précipité	1 gr.
Gaïacol	5 gr.
Camphre	10 gr.
Eucalyptol	20 gr.
Huile de Sésame	100 gr.

1 cc. contient 0 gr. 01 de soufre.

Loeper, Mahoudeau et Michaud l'ont modifiée comme suit :

Soufre	0 gr. 50
Camphre	5 gr.
Huile de Sésame	100 gr.

1 cc. contient 0 gr. 005 de soufre.

Ces deux formules sont à préparer aseptiquement. Les injections sont faites par séries de 10 à raison d'une tous les 2 jours dans la masse musculaire de la fesse. Ce traitement donne de bons résultats dans le rhumatisme articulaire chronique progressif généralisé, mais il a l'inconvénient de provoquer souvent une douleur vive et persistante au point d'injection et une fièvre assez marquée.

SOUFRE COLLOÏDAL

Sobrero et Selmi avaient déjà remarqué qu'en faisant agir de l'hydrogène sulfuré sur de l'acide sulfureux, il se sépare du soufre qui donne dans l'eau distillée une pseudo-solution trouble. Raffo a obtenu du soufre colloïdal soluble en faisant tomber goutte à goutte une solution concentrée d'hyposulfite de sodium dans l'acide sulfurique de D = 1,84, refroidi. La stabilité des solutions colloïdales aqueuses de ce soufre dépend de la présence de sulfate de sodium. Le soufre colloïdal pourrait encore s'obtenir en produisant le soufre précipité par le mélange d'un sulfure alcalin et d'acide sulfureux en présence d'alumine (4).

Le soufre colloïdal se prépare également par voie électrique en plongeant dans l'eau distillée un fil de platine enduit de soufre fondu et formant cathode, un fil de platine constituant l'anode et en utilisant un courant continu de 220 volts. Un autre procédé consiste à faire jaillir un arc à l'aide de 2 charbons plongeant dans

l'eau, entre lesquels on a disposé un petit cube de soufre fondu.

Le soufre colloïdal produit par la décomposition des hyposulfites et des polysulfures, serait un soufre coagulé, intermédiaire entre le soufre colloïdal et le soufre précipité. Le soufre coagulé est blanc sale par réflexion, bleuté ou rose par transmission ; le soufre colloïdal vrai, jaune avec une fluorescence verdâtre dans le premier cas, brun rougeâtre dans le second. Il est plus stable en présence d'une petite quantité d'électrolyte que dans l'eau pure (6). A sec, certains échantillons de soufre colloïdal vrai se présentent en poudre blanche, soluble dans l'eau (5).

Les pseudo-solutions injectables sont dosées à 0 mmgr. 33 par cc. et stérilisables par tyndallisation à + 55°, car elles s'altèrent dès + 70° et floculent à + 100°. Elles sont présentées en ampoules de 2 à 3 cc. Loeper et Warham les ont employées à la dose de 1 cc. comme anti-rhumatismal et sédatif. Elles donnent de bons résultats en injections intramusculaires dans les maladies infectieuses (5) et grâce à elles le pronostic de l'intoxication mercurielle aiguë se trouve amendé ; il suffit, les 2 ou 3 premiers jours, d'administrer une dose de 4 à 6 cc. en 2 ou 3 injections intramusculaires ou sous-cutanées, les jours suivants, on s'en tient à 2 ou 4 cc. et une fois la diurèse rétablie, on se contente de faire une injection de 2 cc. tous les 2 jours (1).

CYSTÉINE (CHLORHYDRATE DE)

Synonymes : **Chlorhydrate de thioalanine. — Hormodyn.**

C'est un amino acide soufré correspondant à l'alanine, existant dans l'organisme notamment sous forme de glutathion qui est un tripeptide ; on la prépare à partir des phanères (cheveux, plumes).

Poudre cristalline, dextrogyre, soluble dans l'eau, l'ammoniaque, les acides. Ses solutions neutres s'oxydent rapidement à l'air, alors que ses solutions acides sont stables (30). En l'absence de précisions sur l'action de la chaleur sur la cystéine, nous conseillons de stériliser ses solutions par tyndallisation.

C'est un agent d'oxydoréduction qui renforcerait l'action des hormones et des vitamines dans l'organisme ; elle est particulièrement indiquée dans la maladie d'Addison, dans les avitaminoses latentes, spécialement les avitaminoses B. On l'injecte par voie intramusculaire ou mieux intraveineuse, à la dose journalière de

2 cm^3 de solution à 1 % (30), additionnée ou non de glycérophosphate de soude pour neutraliser l'acidité du chlorhydrate.

DI-THIO-SALICYLATES

On a reconnu que, pour influencer le métabolisme du rhumatisant, le soufre doit être introduit dans l'organisme à l'état métalloïdique, et non oxydé ou sulfoconjugué. J. CHEVALIER a donc expérimenté les acides di-thio-salicyliques qui contiennent le groupement -S-S- lié à 2 molécules d'acide salicylique, et se rapprochant de la cystine.

L'acide di-thio-salicylique (P. F. = + 289°) s'obtient pur et cristallisé ; il fournit facilement des sels neutres et en particulier ceux de soude et de magnésie qui ont servi à l'expérimentation. Ils renferment tous deux des proportions de soufre voisines de 19 %. Le sel de sodium est soluble dans 1 partie d'eau bouillante et dans 1,5 partie d'eau froide, le sel de magnésium, dans 2 parties d'eau bouillante. Chez l'homme, on peut injecter 1 gr. de sel dans les veines sous forme de solution à 5 %, sans constater de réactions fâcheuses. Cette thérapeutique en est encore au stade expérimental (2). L'auteur n'ayant pas indiqué de température de stérilisation, il nous semble prudent d'opérer par tyndallisation à + 70°.

JURANOL

Ce produit tire son origine des terrains jurassiques d'Orbagnoux (Ain). L'huile sulfurée naturelle, rectifiée, subit une série de lavages à l'acide sulfurique, puis à la potasse pour la purifier des produits malodorants et oxydables ; un entraînement par la vapeur d'eau et une double décantation fournissent deux parties dont l'une A, est incolore et plus volatile que l'autre B. La fonction A fournit l'huile de schiste sulfurée, incolore, de D = 0,890 et contenant 12,5 % de soufre.

L'expérimentation clinique a été faite en particulier avec des ampoules injectables à 10 %. On peut, d'après les premiers essais entrepris, espérer des résultats intéressants dans les maladies qui semblent dues à une carence en soufre ou qui bénéficient de ses propriétés curatives ou modificatrices (3).

MÉTHIONINE

Synonyme : **Acide α-amino-γ-méthylthiobutyrique.**

La méthionine, dérivé méthylé de l'homologue supérieur de la cystine, a été isolée, en 1923, par MULLER des produits d'hydrolyse de la caséine ; sa constitution établie en 1928, par BARGER et COYNE qui en firent la synthèse quelques mois après. Elle existe dans presque toutes les protéines d'origine animale. C'est un amino-acide indispensable qui joue un rôle capital dans la croissance, la production des phanères et dans certains phénomènes de conjugaison.

Par cristallisation en milieu acétonique on obtient des lamelles ou des rosaces incolores fondant à + 283°, avec décomposition ; son pouvoir rotatoire est $\alpha_D = 7°,2$. Les cristaux provenant des solutions aqueuses ou alcooliques sont des tablettes blanches fondant à + 272° et dont le pouvoir rotatoire est $\alpha_D = -11°,8$. La méthionine est très soluble dans l'eau, soluble dans les alcools méthylique et butylique, insoluble dans les autres solvants organiques. Elle n'est pas décomposée par ébullition dans une solution concentrée de soude (27).

A la suite d'expériences encore inédites dans le service du Pr LOEPER, LESURE et THOMAS ont employé la méthionine en association avec l'acide ascorbique et le fer sous forme d'un complexe dans lequel le métal bivalent forme le trait d'union entre les deux acides. Les ampoules sont stérilisées par tyndallisation et contiennent par cc. :

Acide ascorbique	0 gr. 0175
Méthionine	0 gr. 0148
Fer	0 gr. 0056

le soluté est saturé de gaz carbonique au pH = 3,5 à 4. Cette formule, après essais sur l'animal, a été employée chez l'homme au cours des déficiences hépatiques de toute nature, mais sur une échelle trop restreinte pour qu'on puisse encore juger des résultats.

SULFAMIDES

Ces corps sont caractérisés par la présence du groupe $S\text{-}NH^2$. Le premier qui ait été introduit dans la thérapeutique est le chlorhydrate de sulfamido-chrysoïdine, molécule diazotée complexe,

synthétisée par les chimistes allemands. C'est à la suite de leurs travaux au laboratoire de FOURNEAU que J. TRÉFOUEL, Mme TRÉFOUEL, NITTI et BOVET ont montré que seul le groupement phénylsulfamide était actif.

Les principales sulfamides sont :

1° Les sulfamides diazoïques : le Prontosil (dénomination allemande) ou Rubiazol (dénomination française) : chlorhydrate de sulfamidochrysoïdine ; le Prontosil soluble, sel sodique de l'acide 4-sulfamido-phénylazonaphtol-1-acétylamino-7-disulfonique et le Rubiazol soluble, sel sodique du 6′-carboxysulfamido-2′-4′-diaminoazobenzène.

2° Les sulfamides simples, non diazotées : le 1162 F, paraaminobenzène-sulfamide, spécialisé sous les noms de Lysococcine, Néococcyl, Septoplix ; le 40 R-P para (γ-phénylpropylamino) benzène-sulfamide — disulfonate de sodium (Septazine), le 693, paraaminobenzène sulfamidopyridine (Dagénan) et son sel sodique (Solu-Dagénan), le 402 M, Alu-tri paraamino phénylsulfamidopyridine (Sulfalu-pyridine, Lysapyrine).

La médication sulfamidée doit être considérée comme le principal traitement de la méningite cérébrospinale dont elle a complètement modifié le pronostic, ce qui suffit à montrer toute l'importance de cette belle découverte. Certains pensent que dans ce cas, il faut lui associer le sérum, d'autres que la sérothérapie est devenue inutile (26). En outre, elle donne d'excellents résultats dans les maladies dues aux streptocoques, méningocoques, gonocoques, colibacilles, pneumocoques, bacilles de DUCREY, à certains anaérobies, et dans la maladie de NICOLAS-FAVRE ; des résultats variables dans les mycoses, le trachôme, les brucelloses, les staphylococcies ; des résultats actuellement nuls dans la diphtérie, la syphilis, la tuberculose, la poliomyélite, le rhumatisme articulaire aigu (24).

On n'emploie guère les sulfamides par voie parentérale que lorsque la voie digestive est impraticable ; la voie musculaire profonde est préférable (mais il faut y renoncer chez les malades dont les masses musculaires fessières sont peu importantes) ; on arrive ainsi à remplacer 1 ou 2 gr. de médicament par la même quantité en injections intramusculaires. Cette dernière voie peut être utilisée même chez les malades non-intolérants quand on veut les surveiller plus facilement, dans la blennorragie par exemple. La voie intraveineuse ne doit être employée qu'avec précautions, il

peut y avoir sclérose des veines, l'injection poussée trop vite risque de créer des incidents ; on devra donc utiliser des produits dilués (1 à 5 %) en injection lente. Les sulfamides azoïques sont abandonnés par la voie intraveineuse à la suite d'accidents très graves et même mortels (26). Dans les affections rhumatismales, il est désirable d'utiliser le plus largement possible la sulfamidothérapie locale ou régionale (intra ou paraarticulaire, et loco dolenti) qui permet de réduire la dose totale du médicament absorbé (16). Les injections intrapleurales sont bien supportées. On a discuté l'emploi systématique des sulfamides par la voie intra-rachidienne, puisqu'elles passent facilement dans les espaces sous-arachnoïdiens ; il paraît difficile de prendre catégoriquement position à cet égard et il semble que ce soit une question d'espèce : si le malade est dans le coma, si la voie buccale se révèle peu efficace, si l'on trouve un taux de sulfamide insuffisant dans le liquide céphalo-rachidien, on recourera à la voie sous-arachnoïdienne (sous-occipitale) (26). En tous cas, le Soludagénan ne devra jamais être employé par cette voie car il provoque des troubles sphinctériens et des phénomènes paralytiques précoces, en général limités à un seul membre inférieur et dus à une action caustique purement locale du produit (21). La Société médicale des hôpitaux a émis à ce sujet le vœu que seul doit être employé par voie rachidienne, à l'exclusion de tout autre et sous peine de faute grave le 1162 F à 0,8 % (22), (23).

On a noté parfois des incidents locaux après les injections de sulfamides non azoïques (la Soluseptazine exceptée) ; les injections intraveineuses trop rapides provoquent la sclérose des veines ; les injections intramusculaires trop superficielles sont douloureuses et escarifiantes. Les accidents généraux sont représentés par de la céphalée, de l'asthénie, de la gastralgie, de la cyanose (contre laquelle on peut employer le bleu de méthylène intraveineux, mais cet antidote n'est pas sans danger), de la polynévrite, des troubles de la formule sanguine allant jusqu'à l'agranulocytose. Il faut citer enfin l'observation de Rathéry, Duperrat et Maschas d'un syndrome abdominal aigu avec anurie et infarctus tubo-ovarien chez un malade qui avait reçu une injection intraveineuse de Soluseptazine (26).

Les sulfamides sont inscrites au tableau C (25), et un récent décret n'en autorise la délivrance par les Pharmaciens que sur ordonnance médicale.

Sulfamido-Chrysoïdine

Synonymes : **Prontosil. — Rubiazol.**

Ce corps est doué d'un pouvoir colorant intense ; ses solutions alcooliques ou acétoniques sont rouge orange foncé ; il est peu soluble dans l'eau (0,25 %). On peut injecter 10 à 20 cc. de solution à 0,25 % par voie intraveineuse 1 ou 2 fois par jour. Il est indiqué contre toutes les infections streptococciques. Son chlorhydrate, plus soluble, n'est pas employé car il est acide et douloureux à l'injection (10).

Sous les noms de Prontosil soluble et de Rubiazol soluble, on a employé des corps un peu différents :

1° *Prontosil soluble.* — C'est le sel disodique de l'acide 4-sulfamidophénylazonaphtol-1-acétylamino-7-disulfonique. Cette substance, très soluble dans l'eau, est présentée en solution à 2,5 % pour la voie intramusculaire. On a traité l'infection puerpérale par des injections intraveineuses actuellement abandonnées. La voie intramusculaire ou buccale est préférable. Dans la méningite cérébro-spinale, on en a injecté 20 cc. chaque jour par la voie rachidienne, l'évolution est favorable. Il donne de très bons résultats dans le chancre mou, et de bons résultats dans la maladie de NICOLAS-FAVRE et le paludisme à pl. vivax et à pl. falciparum (26).

2° *Rubiazol soluble.* — C'est le sel de sodium du 6'-carboxysulfamido-2'-4-diaminoazobenzène primitivement employé en injections intraveineuses associées à la voie digestive dans les méningites otogènes à streptocoques. TIXIER et ECK, ainsi que d'autres auteurs, ont guéri des pleurésies purulentes en faisant des ponctions répétées et des injections intra-pleurales du produit ; le traitement doit être précoce, intense, prolongé et coupé de petits arrêts (26).

Ajoutons que ces corps ont pratiquement laissé la place aux sulfamides simples pour les raisons que nous avons précédemment indiquées.

1162. F.

Synonymes : **Lysococcine. — Néo-Coccyl. — Septoplix. — Paraaminophénylsulfamide.**

Le 1162. F est un composé incolore, relativement peu soluble dans l'eau et le sérum, soluble dans certains solvants organiques

notamment le diéthylène-glycol (16) et la méthylacétamide (26). La solution à 0,85 % dans l'eau constitue le Septoplix injectable, la solution à 25 % dans la méthylacétamide est la Lysococcine injectable.

Dans les méningites cérébro-spinales ou streptococciques, on emploiera en injections rachidiennes une solution à 0,85 % préparée extemporanément et aseptiquement dans du sérum physiologique, ou bien la formule de HAZARD :

Paraaminophénylsulfamide........................	8 gr.
Chlorure de sodium..............................	5 gr.
Eau, q. s. pour.................................	1,000 cc.

Cette solution est à conserver en atmosphère d'azote ou de gaz carbonique après tyndallisation par 3 chauffages à + 65°. Si on l'utilise le jour de la préparation on peut la stériliser par chauffage de 30 minutes à + 100°.

Il y a grand intérêt à obtenir le plus tôt possible une concentration élevée de 1162. F dans le liquide céphalo-rachidien au moyen d'une injection directe dans les espaces sous-arachnoïdiens. Selon certains auteurs, administrée *per os*, la sulfamide passe mal dans le liquide céphalo-rachidien quand les méninges sont lésées (10). Mais l'injection intra-rachidienne n'est, selon d'autres, qu'une voie adjuvante intéressante au début d'un traitement et dans les formes graves de la méningite au cours desquelles il faut l'utiliser matin et soir car elle maintient pendant 6 heures le taux du liquide céphalo-rachidien plus haut que celui du sang, après quoi l'équilibre se rétablit (17). Le taux de sulfamide à réaliser est de 0 gr. 004 % dans le liquide céphalo-rachidien (14). La dose journalière varie de 5 à 30 cc. de solution à 0,85 % tiédie ; on la poursuivra de 8 à 25 jours (11), (12), (14), (26). Selon R. MARTIN, le traitement des méningites purulentes à streptocoques avec le 1162. F par voie buccale associée à la voie sous-arachnoïdienne doit comporter des doses massives : 0 gr. 10 à 0 gr. 15 par kgr. de poids corporel (13). Si l'on veut employer la voie intramusculaire, les doses varient selon le poids du sujet (26) :

18 kgr..........	100 cc. par 24 heures de solution à 0,8 %
de 18 à 36 kgr.	200 « — — — de — à — %
de 36 à 54 kgr.	300 « — — — de — à — %
au-dessus de 54 kgr..	400 « — — — de — à — %

En milieu colonial rural, on procédera de la façon suivante :

après soustraction d'une certaine quantité de liquide céphalo-rachidien, on injectera une ou deux fois 10 à 20 cc. d'une solution préparée en dissolvant dans 120 cc. d'eau distillée 8 comprimés spéciaux :

Lysococcine	0 gr. 10
Chlorure de sodium	0 gr. 10

La quantité injectée est inférieure de 5 à 10 cc. à la quantité soutirée (15).

Dans la blennorragie, on pratiquera tous les jours, soit une injection intraveineuse de 10 cc. de Lysococcine, en risquant ainsi de provoquer la sclérose des vaisseaux, soit de préférence 2 injections intramusculaires profondes de 5 cc. dans chaque fesse ; on pourra aussi combiner les deux traitements. A. Cain, R. Cattan et J. Arnous ont soigné avec succès une gonococcémie par la Lysococcine intraarticulaire (dans les genoux) les autres voies n'ayant pas donné de résultats.(26).

40. R-P

Synonymes : **Soluseptazine. — Para (γ-phényl-propylamino) benzène. — Sulfamide. — Sulfonate de sodium.**

Le 40. R-P proprement dit (Septazine) est insoluble dans l'eau ; on emploie son dérivé soluble (soluseptazine) corps blanc très soluble dans l'eau en donnant des solutions incolores et neutres. Les solutés injectables titrent 3 et 6 % de principe actif et sont à notre avis stérilisables par tyndallisation à + 70°.

Ce corps est moins toxique que le 1162. F. Dans la méningite cérébro-spinale, on en injectera par voie rachidienne 5 à 20 cc. par jour associés à la septazine *per os* ; dans la méningite à staphylocoques 30 cc., en donnant en plus du 693 (voir plus loin) ; dans la méningite à pneumocoques, 2 fois 20 cc. à 8 heures d'intervalle associés à 40.000 unités de sérum.

Au cours des streptococcies et notamment en obstétrique, on peut injecter jusqu'à 20 cc. de 40. R-P en solution à 6 %, par voie intramusculaire ou intraveineuse (10), (26). De même, dans la blennorragie aiguë (18), le paludisme (26) et les fièvres ondulantes où on l'associe au traitement *per os* (19) ; il est enfin utilisé contre le trachome en injections sous-conjonctivales (26).

693

Synonymes : **Soludagénan. — Sel de sodium du paraaminobenzène-sulfamido-pyridine.**

Ce corps, préparé par WHITBY, est très soluble dans l'eau (50 %), le Dagénan ordinaire étant insoluble. La solution usuelle titrant 33 % de principe actif (26) est très alcaline ; son pH est égal à 11,4 (24). Elle est, selon nous, stérilisable par tyndallisation à + 70°.

Elle est présentée en ampoules de 3 cc. correspondant à 1 gr. de produit, pour injections intramusculaires, à l'exclusion des sous-cutanées. Si l'on emploie la voie intraveineuse, on devra pousser l'injection à la vitesse de 1 cc. par minute, la solution étant diluée à 5 ou 10 % dans le sérum physiologique. Cette même dilution en injections rachidiennes a été rapidement abandonnée à la suite des accidents qu'elle a provoqués (21).

Le soludagénan est indiqué comme traitement des méningites purulentes, en association avec le 1162. F : 20 cc. de solution à 0,85 % de 1162. F en injections rachidiennes, tous les jours pendant 4 jours en moyenne, et en même temps des injections intramusculaires de soludagénan à 33 %, 4 gr. les 2 premiers jours et 3 gr. les jours suivants (20) ; des pleurésies purulentes, en injections intramusculaires renforcées par des intrapleurales, de 1 à 2 gr. tous les 2 jours ; de la blennorragie, en injections intramusculaires de 1 gr. pendant les 6 premiers jours, combinées au Dagénan *per os* : 2 gr. les 3 premiers jours et 1 gr. les 3 suivants.

402 M

Synonymes : **Lysapyrine. — Sulfalupyrine.**

Ce corps est une sulfamide spécialisée injectable par voie musculaire, à la dose de 1 à 3 ampoules par jour, et indiquée dans les méningites cérébro-spinales, les pneumonies et broncho-pneumonies, la fièvre puerpérale, la blennorragie aiguë et ses complications.

THIOCARBAMIDE

La thiocarbamide sert au traitement des rhumatismes et des douleurs rhumatismales à l'aide des formules spécialisées suivantes :

1°	Thiocarbamide	0 gr. 050
	Iodazine	0 gr. 200
	Pipérazine	0 gr. 050

pour une ampoule de 5 cc.

On pratique des injections intramusculaires ou intraveineuses par séries de 8 à 15 tous les jours ou tous les 2 jours.

2°	Thiocarbamide	0 gr. 020
	Iodazine	0 gr. 200
	Dunacaïne	0 gr. 100

pour une ampoule de 20 cc.

On pratique des injections au siège de la douleur maxima par séries de 5, à raison de 1 tous les 2 ou 3 jours.

THIOPHÈNE

Le thiophène, liquide bouillant à + 84°, assez soluble dans l'eau, est une molécule organique soufrée simple, extraite des schistes bitumineux de Seefeld (Tyrol), de Lugano et d'Orbagnoux (Ain). C'est encore actuellement une substance rare et onéreuse, mais elle n'a pas les inconvénients de l'huile soufrée dont l'injection est douloureuse et détermine une élévation thermique qui en limite l'emploi aux malades résistants.

Loeper et Lesobre ont employé le thiophène pur en solution à 10 %, dans l'huile d'olive, à la dose de 1 ou 2 cc., parfois 3 cc., en injections intramusculaires, comme traitement du rhumatisme chronique. Il est rapidement éliminé, et se révèle une arme efficace contre les manifestations rhumatismales, il ne cause aucun incident notable (8), (9).

Le thiophène hydrosoluble est l'acide thiophène-carboxylique, cristallisé, incolore ; il a les mêmes propriétés que le thiophène.

On l'emploie en solution à 5 %, à raison de 2 à 4 cc. tous les jours, en injections sous-cutanées ou intraveineuses, comme agent anti-infectieux au cours des rhumatismes, de la pneumonie, de la

tuberculose, des complications pulmonaires de la grippe ; également contre le psoriasis, le zona, la maladie de DUHRING, en solution à 10 %, à la dose de 2 cc. tous les 2 ou 3 jours, par séries de 10 ou 15 ; on peut l'associer au bismuth oléosoluble comme traitement de la syphilis (7). LOEPER et ses élèves notamment R. LESOBRE en ont préconisé l'emploi pour certaines affections hépatiques ou intestinales ; leurs conclusions ont été développées par CAMPANACCI, *Bull. Thérap.*, n° 7, oct. 1938.

THIOSINAMINE

Synonymes : **Allylthio-urée, Fibrolysine**

Cristaux incolores amers peu solubles dans l'eau, plus solubles dans les solvants organiques. Le salicylate de soude, l'antipyrine augmentent sa solubilité, ce qui permet la préparation des solutés injectables qui doivent être stérilisés par tyndallisation :

Thiosinamine	10 gr.
Antipyrine	10 gr.
Eau distillée, q. s. pour	200 cc.

On l'emploie à la dose de 0 gr. 10 en injection hypodermique en raison de son action sur les tissus de sclérose (2) et en particulier pour le traitement mécanique des rétrécissements de l'urèthre, sous forme dans ce dernier cas, de solution aqueuse à 4 % dont trois à quatre injections de 0 gr. 08 à 0 gr. 20 suffisent habituellement.

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SPARTÉINE (Sulfate de)

1. F. MERCIER. — *Ann. Labo. Clin.*, 1931, XXVIII, 146.
2. ANONYME. — *Journ. Prat.*, 2 février 1935, in *U. P.*, 1935, LXXVI, 203.
3. P. LEBEAU et G. COURTOIS. — *Trait. Pharm. Chim.*, 1938, II, 1369.

La spartéine, alcaloïde pyridinique liquide du genêt à balai, est employé à l'état de sulfate, sel cristallisé, dont l'hydrate à 5 molécules d'eau constitue le produit officinal. Il est incolore, très soluble dans l'eau en donnant une solution acide, soluble dans l'alcool, insoluble dans l'éther ; il fond à + 145°, son pouvoir rotatoire est α_D = — 22°,5. Il contient environ 55 % de bases, 23 % d'acide sulfurique et 21 % d'eau (3).

Autoclavées dans de bons verres non alcalins, les solutions du sulfate de spartéine ne présentent aucune différence de pouvoir rotatoire avec les solutions non chauffées ; elles sont donc stérilisables pendant 20 minutes à + 110° dans du verre neutre.

Le soluté officinal titre 0 gr. 05 de sel par cc., on peut employer aussi un soluté à 0 gr. 02 par cc. Les doses usuelles varient de 0 gr. 05 à 0 gr. 15 par jour chez l'adulte, dans les cas de tachycardie et d'arythmie (2). Comme cure brusque de désintoxication des morphinomanes on pratique 3 injections de 0 gr. 02 par jour. Dans les cas d'asystolie, on emploie l'une ou l'autre des formules suivantes, à raison de 1 à 3 cc. par jour par voie sous-cutanée :

1°	Chlorhydrate de morphine	un ctgr.
	Sulfate de spartéine	0 gr. 05
	Eau, q. s. pour	1 cc.

à stériliser par 3 chauffages à + 100°.

2°	Sulfate de spartéine	0 gr. 025
	Caféine	0 gr. 25
	Salicylate de soude	0 gr. 20
	Eau distillée, q. s. pour	1 cc.
3°	Sulfate de strychnine	0 gr. 001
	Sulfate de spartéine	0 gr. 05
	Eau, s. q. pour	1 cc.

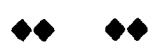
à stériliser à + 110° en verre neutre.

On utilise également le camphosulfonate de spartéine, cristallisé, préparé en mélangeant des solutions alcooliques concentrées d'acide camphosulfonique et de spartéine.

Ce sel se présente en aiguilles blanches, très soluble dans l'eau froide, soluble dans l'alcool et le chloroforme, insoluble dans les autres solvants ; il est anhydre et contient 33 % de spartéine base.

Il a toutes les indications de l'huile camphrée et des camphres solubles, de même que celles de la spartéine : défaillance et tendance au collapsus cardiaque au cours des maladies infectieuses et des cardiopathies, hyposystolie, traitement préventif et curatif des troubles cardiovasculaires des anesthésies générales et des rachianesthésies ; enfin, c'est le diurétique énergique de choix des asystoliques œdémateux et des hyposystoliques hypertendus.

Il s'administre aux doses quotidiennes de 0 gr. 10 à 0 gr. 30 en injections intramusculaires. Il n'est pas toxique et ne s'accumule pas ; le traitement peut être par conséquent prolongé pendant 8 à 10 jours consécutifs (1).



STOVAÏNE

. *Synonymes :* **Chlorhydrate d'Amyléine. — Amylocaïne. — Chlorhydrate de diméthylamino diméthyléthyl-benzoylcarbinol.**

1. R. Weitz. — *F. M. N.*, 1935, 394.
2. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, II, 384.

La Stovaïne préparée par Fourneau en 1904, est inscrite au Codex depuis 1920. C'est une poudre cristalline blanche fondant à + 175°. Elle est soluble dans 2 parties d'eau, 3 parties d'alcool absolu, insoluble dans l'éther. Ses solutions aqueuses sont neutres à l'hélianthine (2).

La stérilisation des solutions de stovaïne à + 115° peut se faire dans les très bons verres sans altération appréciable. Selon Mossler, il y aurait une décomposition de 0,75 % à + 100° et de 1 % à 115°. Cela est presque négligeable ; toutefois si l'on ne dispose pas de très bons verres, il sera préférable de ne chauffer qu'à + 100°.

La stovaïne est incompatible avec les alcalis et les sels alcalins, le borate de soude et les réactifs des alcaloïdes.

Selon de Lapersonne et Reclus les solutions aqueuses et chlorurées sodiques, isotoniques au 1/100e ont une toxicité beaucoup moindre que les solutions de cocaïne du même titre.

En injections sous-cutanées ou sous-conjonctivales, la stovaïne a paru supérieure à la cocaïne. Pure, ou associée à cette dernière, elle améliore l'anesthésie lombaire en supprimant les chances de syncope. — Reclus l'employait en solution à 0 gr. 50 % en injections pour l'anesthésie locale. Il a injecté 40 cc. de cette solution sans inconvénient. Sauvez se sert en chirurgie dentaire d'une solution à 1 %. Pour l'anesthésie rachidienne, Tuffier, Keuderdzy et Bertaux ont établi deux formules :

1°	Stovaïne	0 gr. 10
	Chlorure de sodium	0 gr. 10
	Eau distillée. Q. s. pour 1 ampoule de	1 cc.
2°	Stovaïne	0 gr. 08
	Borate d'adrénaline	0 gr. 00026
	Chlorure de sodium	0 gr. 0022
	Eau distillée. Q. s. pour 1 ampoule de	2 cc.



STROPHANTINE

Synonymes : **Inéine. — Strophantoside.**

1. H. Berry. — *Quart. Journ. of Pharmacy and Pharmacology*, 1935, VIII, 464.
2. Plegge et Birk. — *Deut. Méd. Woch.*, 1937, LXIII, 427.
3. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, II, 1757.

La Strophantine, glucoside du Strophantus hispidus (Apocynacées), inscrite au Codex de 1908, ne figure pas à la pharmacopée de 1937 qui considère l'ouabaïne comme seule strophantine officinale.

Elle se présente comme une poudre blanche ou jaunâtre, en partie amorphe et en partie cristallisée, contenant 6 à 8 % d'eau, qu'elle perd à + 110°, dextrogyre, assez peu soluble dans l'eau et dans l'alcool, presque insoluble dans les autres solvants. Ses solutions aqueuses, légèrement louches, moussent abondamment.

Leur stérilisation doit être effectuée par tyndallisation vers 70°-80° pendant 30 minutes, en répétant l'opération 3 jours de suite (3).

On peut leur assurer une stabilité parfaite en ajustant leur *p*H à 6,5 ; elles peuvent alors être stérilisées à l'autoclave à + 115°, pendant 30 minutes et se conservent bien (1).

On emploie la strophantine par voie intra-veineuse, en solution dans l'eau chlorurée à 9 °/oo à la dose de 0 gr. 0002 par centimètre cube dans les cas d'asystolie (3) et d'angor pectoris et d'infarctus du myocarde à la dose de 0 gr. 001 en 4 à 6 injections pour les premières 24 heures (2).



STRYCHNAL

1. R. Weitz. — *F. M. N.*, 1935, 401.

Le strychnal, sulfate de l'éthylbétaïne de l'acide strychnique, est un produit blanc cristallisé, soluble dans l'eau et l'alcool. Amer comme la strychnine et donnant les mêmes réactions qu'elle. Il conserve toutes les propriétés physiologiques et thérapeutiques de

la strychnine avec une toxicité beaucoup diminuée (10 fois moindre). On l'administre par voie hypodermique, en ampoules à 0 gr. 01 par cm³, en injectant 1 ou 2 ampoules par jour.



STRYCHNINE ET SES SELS

1. P. Fleury et Hourvitz. — *J. P. C.* (7), 1919, XX, 369.
2. A. Leclère. — *J. P. C.* (7), 1920, XXI, 183.
3. Goursat. — *J. P. C.* (8), 1931, XIV, 432.
4. *a*) Paraf, Delay et Macrez. — *Com. Sté. Méd. Hôp.*, 1er déc. 1933. — *b*) Th. Bertrand-Fontaine et A. Claus. — *Com. Sté. Méd. Hôp.*, 6 décembre 1933. — *c*) Denéchau et Bonhomme. — *Com. Sté. Méd. Hôp.*, 24 déc. 1933, in *U. P.*, 1934, LXXV, 44.
5. G. Paisseau, J. Braillon et C. Vaille. — *Bull. Soc. Péd.*, janvier 1935, in *U. P.*, 1935, LXXVI, 264.
6. G. Paisseau, J. Braillon, C. Vaille et F. Jannette-Walen. — *P. M.*, 1936, nº 62, 1241.
7. P. Cossa, H. Bougeant, M. Puech et P. Sassi. — *P. M.*, 1937, nº 92, 1637.
8. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, II, 1402.
9. *Form. Pharm. Seine.*

La strychnine, alcaloïde à noyau quinoléique de la noix vomique a été isolée, en 1818, par Pelletier et Caventou.

Elle se présente en prismes rhomboïdaux droits anhydres, incolores de D = 1,36, très peu solubles dans l'eau même bouillante, plus solubles dans l'alcool chaud et le chloroforme. Son pouvoir rotatoire est α_D = —30°,44. C'est une base tertiaire monovalente fournissant avec les acides forts des sels bien cristallisés. Elle donne de nombreuses réactions de précipitation et de coloration (8).

Elle est peu employée à l'état de base ; cependant l'un de nous a préparé, il y a déjà longtemps, pour le Dr J. Hallé, une huile camphrée strychninée qui correspond à l'huile camphrée additionnée de un ou deux mmgr. de strychnine-base par cc. Il suffit de pulvériser cet alcaloïde, puis d'ajouter peu à peu l'huile camphrée ; on triture au mortier avec soin ; on introduit le mélange dans un flacon bouché et on place celui-ci dans un bain-marie qu'on porte à l'ébullition. La dissolution opérée, on peut filtrer au besoin sur papier, répartir ou non en ampoules, puis stériliser à + 100°. Si l'on voulait incorporer une plus grande quantité de strychnine, il faudrait ajouter un peu d'acide oléique, ce qui aurait l'inconvénient de rendre l'injection douloureuse.

Pratiquement, on emploie le sulfate de strychnine à 5 molécules d'eau, cristallisé en aiguilles clinorhombiques incolores, non efflorescentes, devenant anhydres à + 100°. Il est soluble dans l'eau et dans l'alcool, ses solutions aqueuses sont neutres. Son pouvoir rotatoire est α_D = — 24°,6. Il contient 78% de strychnine, 12 % d'acide sulfurique et 10 % d'eau (8). Très toxique, il est ainsi que la base, inscrit au tableau A.

On a prétendu autrefois qu'on ne pouvait pas stériliser les solutions de sulfate de strychnine à l'autoclave à + 110° ou + 120° sans décomposition. Assurément, si l'on fait usage de verres abandonnant à l'eau une quantité assez notable d'alcali, une fraction de l'alcaloïde sera déplacée de son sel et la strychnine précipitera proportionnellement à l'alcalinité du verre. L'un de nous a pu constater qu'en opérant dans de bonnes conditions, on n'observe plus aucune altération appréciable.

Si la solution reste limpide, cela ne veut pas dire nécessairement qu'aucune altération ne se soit produite. La quantité de strychnine mise en liberté peut être inférieure à la quantité maxima pouvant rester en solution. D'autre part, sous l'influence combinée de l'eau et de la chaleur, il peut se produire, sans trouble ni précipité une réaction qui modifie la composition du liquide injectable et, par suite, son action thérapeutique.

Duffour a comparé une solution témoin non chauffée, à une solution autoclavée à + 120° dans un très mauvais verre ; il en déduit que pendant le chauffage une perte de 3,6 % en moyenne est possible ; mais les conditions de l'expérience et les méthodes analytiques employées rendent ses conclusions peu certaines. Le même auteur s'est ensuite livré à des essais de toxicité sur le lapin ; ils se sont révélés contradictoires, mais d'après leur moyenne, il conclut que la stérilisation des solutions de sulfate de strychnine peut se faire sans inconvénient thérapeutique à la température de l'autoclave.

Kroeber recommande de les préparer le plus aseptiquement possible, sans les stériliser. Nous pensons qu'il y a dans cette manière de voir un peu d'exagération.

L'un de nous, après avoir repris les expériences de Duffour, sans en retirer aucune conclusion valable, a eu recours à l'essai polarimétrique qui présente plus d'exactitude.

Voici les résultats obtenus pour les échantillons stérilisés :

a) Ballon de 50 cc. en verre Sérax contenant 40 cc. de sulfate de strychnine à 2 % et 10 cc. d'eau distillée : $\alpha = -1°,50'$.

b) Ballon de 50 cc. en verre blanc contenant 40 cc. de sulfate de strychnine à 2 % et 10 cc. d'eau distillée : $\alpha = -1°,48'$.

c) Ballon de 50 cc. en verre Sérax contenant 40 cc. de solution de sulfate de strychnine à 2 %, 5 cc. d'eau distillée et 5 cc. de NaOHN/100 $\alpha = -1°,48'$.

Pour un autre essai exécuté dans les mêmes conditions, la déviation du témoin était de — 48', les déviations des deux échantillons stérilisés étaient de — 46' et — 48'. La différence est donc infinitésimale.

Dans les bons verres du commerce, on n'a jamais observé de dépôt de strychnine après passage à l'autoclave. La stérilisation des solutions de sels de strychnine peut se faire à + 110° ou + 115° sans inconvénient, à moins que les verres utilisés ne soient trop nettement alcalins — c'est-à-dire que l'alcalinité des récipients ne doit pas dépasser sensiblement 3 cc. de NaOHN/100 pour 100 cc. d'eau chauffée dans un vase de capacité correspondante. Le soluté officinal injectable de sulfate de strychnine est au 1/1000 ; 1 cc. correspond à un mmgr. de sulfate de strychnine, le Codex n'indique pas de température de stérilisation.

Il est employé en injections sous-cutanées de 1 à 6 mmgr. comme toni-cardiaque, dans les cardiopathies à base d'hyposystolie, dans les pyrexies avec adynamie et tendance au collapsus et surtout comme névrosthénique dans l'asthénie grippale, la neurasthénie, l'impuissance, les convalescences.

A hautes doses, le sulfate de strychnine est employé :

1° Pour combattre les intoxications barbituriques. La dose totale nécessaire est difficile à calculer *à priori* et varie selon la quantité de toxique absorbée par le patient. En règle générale, on fera des injections intraveineuses de un cmgr. toutes les heures ou toutes les deux heures, soit 0 gr. 10 à 0 gr. 12 par jour. Il importe de ne pas employer d'emblée des doses massives sinon on risque de déclancher une crise tétanique sans tirer le sujet de son coma (PARAF, DELAY et MACREZ) (4). Il est commode, dans ce cas, d'utiliser une solution à 0 gr. 20 % en ampoules de 5 cc. correspondant chacune à 0 gr. 01 de sel, ce qui permet de l'injecter à vitesse réduite, tout en surveillant attentivement le malade, et de cesser au moindre signe alarmant.

2° Pour traiter l'intoxication diphtérique grave en association

avec la sérothérapie et l'extrait surrénal total. L'administration fractionnée par voie hypodermique donne les meilleurs résultats en réalisant une imprégnation constante de l'organisme par le médicament. On emploie une solution à 1 ou 2 °/₀₀ en injections distantes de 3 heures, sans inconvénients, étant donné l'élimination rapide du médicament. Les doses sont de 0 mmgr. 5 à 1 mmgr. par kgr. et par jour, dans les cas types ; dans les cas hypertoxiques, 1 mmgr. 25 à 2 mmgr. par kgr., mais ces dernières présentent un certain danger. Il ne faut pas dépasser 1 mmgr. jusqu'à 1 an et demi, 2 mmgr. jusqu'à 3 ans, 2 et 3 mmgr. jusqu'à 6 ans, 5 mmgr. chez les enfants plus âgés. On continuera ce traitement jusqu'au 50e jour sans maintenir forcément les fortes doses du début. Le croup est une contre-indication absolue en raison du spasme (5), (6).

3° Pour traiter les complications nerveuses de l'alcoolisme, à l'aide d'une solution à 0 gr. 005 par cc. : dans le delirium tremens, on administrera dès le premier jour, de 0 gr. 03 à 0 gr. 05 au total, en commençant par 0 gr. 005 ou 0 gr. 010, et en répétant la dose toutes les 3 à 5 heures ; dans le délire simple, la dose quotidienne est de 0 gr. 02 au début, que l'on peut porter à 0 gr. 03 si c'est nécessaire ; dans les accidents chroniques, on injectera le premier jour de 0 gr. 005 à 0 gr. 015 et 0 gr. 020 le 2e ou le 3e jour, en maintenant cette dose pendant 20 jours, avant de diminuer de 0 gr. 001 par jour jusqu'à zéro (7).

L'association strychnine-atropine a été préconisée par ZOELLER contre le mal de mer (9) :

Sulfate neutre d'atropine	1/4 de mmgr.
Sulfate de strychnine	1/2 de mmgr.
Eau distillée, q. s. pour	1 cc.

pour une ampoule à stériliser au bain-marie à + 100° pendant 30 minutes.

Injecter une ampoule 1/4 d'heure avant le départ et 1 ampoule 2 heures après ; si la mer est forte, 2 ampoules.

On emploie beaucoup, comme reconstituant, en injections sous-cutanées, le sulfate de strychnine en association avec le phosphate, le glycéro-phosphate et le cacodylate de soude, séparément ou ensemble. Ces sels sont alcalins et leur mélange avec le sulfate de strychnine donne lieu à un précipité qui a soulevé maintes discussions à propos de sa nature et des moyens de l'éviter. Ce sont

FLEURY et HOURVITZ (1) qui ont définitivement montré qu'il s'agit de strychnine libre et non d'un sel de l'alcaloïde, et de nombreux auteurs ont proposé des moyens d'y remédier. FLEURY et HOURVITZ avaient employé l'acide chlorhydrique en quantité minime, LECLÈRE (2), le saccharose qu'il dissolvait en même temps que le sulfate de strychnine ; il mélangeait ensuite cette solution à la solution de glycérophosphate et de cacodylate de soude selon la formule :

Glycérophosphate de soude	100 gr.
Cacodylate de soude	50 gr.
Sulfate de strychnine	1 gr.
Saccharose	250 gr.
Eau, q. s. pour	1.000 cc.

GOURSAT a préconisé la formule et le mode opératoire suivants (3) :

Cacodylate de soude	0 gr. 05
Glycérophosphate de soude	0 gr. 10
Sulfate de strychnine	0 gr. 001
Eau distillée, q. s. pour	1 cc.

Dissoudre dans la moitié de l'eau le glycérophosphate et le cacodylate de soude. Ajouter à la liqueur de l'acide chlorhydrique au 1/10e jusqu'à pH = 6,6 (virage au jaune verdâtre du bleu de bromothymol). Il est préférable de comparer la teinte avec celle d'un étalon de pH = 6,6 préparé comme suit :

Phosphate acide de potassium N/5	50 cc.
NaOHN/5	17,8 cc.
Eau distillée, q. s. pour	200 cc.

à conserver en flacons de verre paraffinés intérieurement.

D'autre part, faire dissoudre le sulfate de strychnine dans le reste de l'eau et mélanger cette solution à la première. Diviser en ampoules de verre neutre et stériliser à + 100° pendant 15 à 30 minutes au plus.

La formule officinale est la suivante :

Sulfate de strychnine	0 gr. 10
Glycérophosphate de soude	10 gr.
Cacodylate de soude	5 gr.
Acide citrique	1 gr.
Eau distillée, q. s. pour	100 cc.

Dissoudre le cacodylate et le glycérophosphate de soude dans une partie de l'eau, le sulfate de strychnine dans une autre, mêler

et redissoudre le précipité au moyen de l'acide citrique. Le pH de ce soluté est 6,3. Stériliser par tyndallisation à + 70°. 1 cc. correspond à 0 gr. 10 de glycérophosphate de soude, 0 gr. 05 de cacodylate de soude et à 1 mmgr. de sulfate de strychnine.

Lorsqu'on devra préparer une telle solution, il faudra employer des produits rigoureusement purs, un verre neutre et non calcaire, et ne pas utiliser de solutions trop anciennes qui auraient perdu leur limpidité primitive.

Le cacodylate de strychnine, composé impur et mal défini, n'est pratiquement plus employé.

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SUBENTINE

Synonymes : **Subentol. — Paraphénolsulfonate d'anesthésine.**

1. R. Weitz. — *F. M. N.*, 1935, 402.

Poudre blanche cristalline, en fines aiguilles, fondant à 295°, soluble dans 100 parties d'eau froide.

L'anesthésine étant presque insoluble dans l'eau et ne se prêtant par conséquent pas bien à la préparation des liquides injectables, on a proposé d'utiliser pour ceux-ci son phénolsulfonate ou subentine.

Ses solutions sont stables et résistent à l'ébullition. Il est légèrement antiseptique et excellent analgésique local.

La formule de solution est la suivante :

Subentine	0 gr. 80 à 1 gr.
Chlorure de sodium	0 gr. 70
Eau distillée..........................	100 gr.

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SYMPATHOL

1. M. Roch et F. Sciclounoff. — *P. M.*, 1937, N° 47, 875.
2. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, II, 466.

Le Sympathol, chlorhydrate de *p.* oxyphényléthanol méthylamine, ne diffère de l'adrénaline que par le fait de ne posséder qu'une seule fonction alcool.

Il a l'aspect d'une poudre blanche, très soluble dans l'eau, stable

à l'air et à la lumière, fondant à + 151°-+152°. Ses solutions aqueuses sont stérilisables à chaud sans décomposition (2).

C'est un analeptique vasculaire à action périphérique, succédané de l'adrénaline, employé en solution à 6 %, à la dose de 1 ou 2 cm³, les injections peuvent être répétées toutes les heures ou toutes les 2 heures (1).

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SYNTROPAN

1. R. Weitz. — *F. M. N.*, 1935, 414.

Le syntropan, phosphate de l'ester-3-diéthylamino-2-2-diméthylpropylique de l'acide tropique est un sel de saveur amère, très soluble dans l'eau. Ce produit est doué d'une action spasmolytique générale ; 0 gr. 01 de syntropan a sensiblement la même action que 0 gr. 0005 de sulfate d'atropine. Il existe en ampoules de 0 gr. 01.

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TÉCARINE

Synonymes : **Homocaféinate de sodium. — Théobrominacétate de sodium.**

1. R. Weitz. — *F. M. N.*, 1935, 225.

Poudre blanche, cristalline, fusible à 260°, très soluble dans l'eau froide ; ses solutions sont neutres et parfaitement stables.

C'est un sel soluble de la théobromine, on peut donc l'injecter par les voies intra-musculaire, sous-cutanée et intraveineuse. Il est diurétique et déchlorurant. Il existe en ampoules de 0 gr. 25 dans 2 cm³ : une à trois par 24 heures.

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TELLURE

1. A. Lesure. — *Journ. de Pharm. et de Chim.*, 1914 (7), t. IX, 537.
2. M. Deguy. — *Bull. de Therap.*, 1916, Nos 20, 21, 22.
3. E. Marchoux et V. Chorine. — *Com. Ac. Sc.*, 20 juillet 1937.
4. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, I, 201.

Le Tellure est un métalloïde blanc, d'aspect métallique, que l'on extrait des boues des chambres de plomb et des résidus de la métallurgie du Bismuth ou du Cuivre (2).

Marchoux et Chorine traitent la lèpre par le tellure métallique pur, pulvérisé, soit par le tellurate ou le tellurite de sodium peu solubles dans l'eau, soit enfin par le cyclotelluro-pentane ; tous ces corps étant mis en suspension dans une huile ou dans le sérum glucosé, on pratique tous les 5 jours une injection sous-cutanée ou intra-musculaire de 0 gr. 25 qui paraît bien supportée ; les douleurs disparaissent, les léprômes s'affaissent et l'état général se consolide dans les mois qui suivent le traitement (1). Deguy et Lesure ont préparé une suspension métallique de Tellure ; ils ont relaté les essais antérieurs dus à Berzelius, Czapek et J. Weill, Mead et Grès, Mylnes, Gmelin, etc., sur les animaux ou sur l'homme, et relaté les résultats assez inconstants ou indéterminés qu'ils avaient obtenus (1-2)

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TÉNÉBRYL

1. Weitz. — *F. M. N.*, 1935, 1423.

Le ténébryl ou diiodométhane sulfonate de sodium est une poudre blanche ; très stable, soluble dans deux fois son poids d'eau distillée, la solution à 6 % est isotonique. 100 parties du produit renferment 68 parties d'iode fortement combiné puisque la solution supporte sans s'altérer l'ébullition à l'obscurité.

En raison de son opacité aux rayons X et de son élimination presque exclusive et très rapide par les urines, on l'utilise pour l'exploration radiologique des voies urinaires : pour l'urographie par voie intraveineuse, il suffit d'injecter 15 gr. de produit, soit

50 cc. de solution à 30 % (LEGUEU, FEY et TRUCHOT) ou même 25 cc. de solution à 45 % ; pour la pyélographie instrumentale, on peut employer des solutions contenant 15 à 30 % de ténébryl. Une autre application du produit est l'artériographie qui s'effectue avec des solutions concentrées (50 %).

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TERRES RARES ET CORPS RADIO-ACTIFS

1. P. E. MORHARDT. — *P. M.*, 12 novembre 1932, in *B.S.P.*, 1934, XLI, 190.
2. R. WEITZ. — *F.M.N.*, 1935, 308.
3. R. WEITZ. — *F.M.N.*, 1935, 425.
4. *Form. Pharm. Seine.*
5. P. E. WEIL et MENETRIER. — *Com. Soc. Franç. d'Hémat.*, 5 février 1937, in *P.M.*, 1937, N° 24, 456.
6. P. LEBEAU et G. COURTOIS. — *Trait. Pharm. Chim.*, 1938, I, 557.

1° TERRES RARES :

On utilise en thérapeutique certains sels, en particulier les sulfates, des minéraux du groupe cérique : cérium, néodyme, praséodyme, didyme, samarium ainsi que du palladium, du rhodium et du vanadium.

Depuis de nombreuses années, l'oxyde et les sels de cérium ont été essayés contre diverses affections : tuberculose (à la suite des travaux de GRENET et DROUIN), diarrhée, et l'oxalate de cérium contre les vomissements. On a d'abord employé une solution aqueuse à 2 % de sulfates de terres rares, en injections intraveineuses et obtenu des résultats encourageants dans certaines formes de tuberculose. Pour les injections intramusculaires et sous-cutanées, GRENET et BLOCH, ainsi que DROUIN ont préparé une solution lipoïdique de même concentration, mieux tolérée ; on pratique une injection tous les 2 jours en commençant par 1 cm^3 et on passe successivement à 2, puis 4 cm^3 (3).

2° CORPS RADIO-ACTIFS :

Le radium fournit une émanation, le radon, gaz radioactif que l'on peut employer en injections hypodermiques sous forme d'oxygène radio activé ; on fait passer un courant de ce dernier gaz à un débit convenablement réglé dans un tube métallique contenant

un poids déterminé de sel de radium et libérant une quantité connue de radon. On a ainsi obtenu d'intéressants résultats en cas de pneumothorax, de métrites, de tumeurs et de maladies nerveuses telles que maladie de PARKINSON et tabes.

On peut utiliser aussi, soit une émulsion de sel insoluble, le sulfate de radium par exemple, soit une solution aqueuse de sel soluble, le bromure, pur ou en association avec l'iodoforme, le cacodylate de soude, le menthol, le gaïacol, le thiocol, etc.

Le mésothorium, isotope du radium s'emploie en solution aqueuse au taux de 1/4 à 2 microgrammes par centimètre cube en injections hypodermiques ou intraveineuses, dans le traitement du cancer de la vessie, de la surdité et pour améliorer l'état général des leucémiques et des rhumatisants (6).

Les solutions de sels de radium et de mésothorium sont stérilisables par la chaleur, mais on ne doit les employer que 2 ou 3 jours après la stérilisation car celle-ci diminue temporairement leur radio-activité et au bout de ce temps elles reviennent à leur état d'équilibre.

Le Thorium X est utilisé, soit sous forme d'oxygène radioactivé par son émanation le thoron, dans des conditions analogues à celles qui ont été décrites à propos du radium (6), soit en injections intramusculaires de solutés répondant à la formule ci-dessous (4) :

Chlorure de sodium	7 gr. 50
Chlorure de calcium	0 gr. 20
Bromure de Thorium X	N microgrammes
Eau distillée, q. s. pour	1.000 cc.

Il est employé comme traitement de la leucémie, du diabète, de la démence précoce (6) et de la polyglobulie érythrémique. Dans ce dernier cas, on pratique des injections intramusculaires, hebdomadaires, de 100 à 300 microgrammes par séries de 8 séparées par 2 mois de repos, en pratiquant un examen hématologique immédiatement avant chaque injection (5).

L'emploi du thorium X doit être surveillé de très près sinon on risque de provoquer une anémie pernicieuse.

L'oxyde de thorium (Diagnothorine, Thorotrast) est une poudre blanche très fine, insoluble dans l'eau, à peu près dépourvue de toxicité ; que l'on utilise pour le diagnostic radiologique et l'artériographie, sous forme de suspensions aqueuses colloïdales à 25 %, stabilisées ou non par adjonction de glucides. — On peut les in-

jecter dans diverses cavités (sinus, vessie, urethères). Egas MONIZ, de Lisbonne, en a fait l'application à l'artériographie cérébrale.

L'oxyde de thorium ne doit pas être employé chez les enfants (1), (2).



THEOBRYL

Synonymes : **Allylthéobromine. — Théobromine injectable. — 1-allyl-3,7-diméthyl-2,6-dioxypurine.**

1. R. WEITZ. — *F. M. N.*, 1935, 35.

Paillettes blanc nacré, fondant à 140° solubles dans 200 parties d'eau froide et dans 12 parties de solution de benzoate de soude à 25 %, donc plus solubles que la théobromine.

C'est un diurétique déchlorurant et un excitant du centre respiratoire (RICHARD, SAINT-YVES, MOUCHET, MERCIER), dont on pratique des injections intramusculaires de 0 gr. 10 à 0 gr. 20 chez l'adulte. Chaque ampoule de 2 cc. renferme 0 gr. 20 du produit. En cas de besoin cette dose peut être renouvelée ou augmentée. Le théobryl est parfois dangereux chez les grands hypertendus.



THÉOPHYLLINE-ÉTHYLÈNEDIAMINE

Synonymes : **Aminophylline. — Caréna. — Euphylline.**

1. P. N. DESCHAMPS. — *P. M.*, 1938, n° 12, 211.
2. LEBEAU et COURTOIS. — *Trait. Pharm. Chim.*, Paris, 1938, II, 1629.

La théophylline, alcaloïde isomère de la théobromine, est trop peu soluble (1 pour 127 parties d'eau) pour être utilisée comme médicament injectable. Les travaux entrepris afin d'obtenir un dérivé soluble ont abouti à la combinaison : théophylline-éthylène-diamine, cristallisée, soluble dans l'eau (1 pour 5 parties), insoluble dans les solvants organiques, renfermant 78 % de théophylline et 22% d'éthylène-diamine (2).

L'éthylène-diamine, solubilisant parfait de la théophylline, a en outre une action thérapeutique synergique ; leur combinaison est le diurétique le plus puissant de la série purique, c'est en même temps un vasodilatateur coronarien et rénal très actif et accessoi-

rement un eupnéique. Elle est donc spécialement indiquée dans les cas d'angine de poitrine, d'infarctus du myocarde et d'oppression douloureuse des hypertendus.

Elle est présentée en ampoules de 0 gr. 48 pour 2 cc. pour la voie intramusculaire (1 à 3 par 24 heures), ou en ampoules de 0 gr. 24 pour 10 cc. de sérum glucosé isotonique, pour la voie intraveineuse, à injecter en 3 ou 4 minutes (1 ou 2 par jour dans les cas graves) (1).

Dans l'insuffisance ventriculaire gauche et les myocardites chroniques, on l'associe systématiquement à l'ouabaïne en injectant dans les veines 1 ou 2 ampoules contenant 1/4 de mmgr. d'ouabaïne et 0 gr. 10 de théophylline-éthylène-diamine, par jour.



TUTOCAÏNE

Synonymes : **Synchlorhydrate de paraaminobenzoyldiméthylamino-propanol secondaire.**

1. R. Charonnat. — *B. S. P.*, 1930, XXXVII, 551.
2. R. Weitz. — *F. M. N.*, 1935, 450.

C'est un des racémiques possibles parmi les isomères prévus par la théorie. Produit blanc cristallisé, presque inodore, fondant vers 215° (2).

Peu soluble dans l'alcool, très soluble dans l'eau en donnant des solutions neutres qui ne peuvent être chauffées longtemps sans décomposition car elles brunissent ; on doit les préparer en l'absence d'alcali. L'adrénaline ne peut y être ajoutée qu'immédiatement avant l'injection.

C'est un anesthésique local, deux fois plus toxique que la novocaïne, mais deux fois moins que la cocaïne. La solution pour anesthésie superficielle titre 1 % ; celle pour l'anesthésie profonde 5 % ; cette dernière équivaut à une solution de cocaïne à 4 % (1).

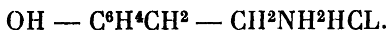


TYRAMINE

1. M. Loeper. — *P. M.*, 13 novembre 1937.
2. A. Varay. — *Thèse Doct. Méd.*, Paris, 1937, Jouve, édit.
3. J. L. Herrenschmidt. — *Thèse Doct. Méd.*, Paris, 1938, Arnette, édit.

4. J. VIGNALOU. — *Thèse Doct. Méd.*, Paris, 1939, JOUVE, édit.
5. A. LESURE et A. THOMAS. — *J. P. C.* (8), 1937 (XXVI).
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7. R. WEITZ. — *F. M. N.*, 1935, 450.

La tyramine ou para-hydroxy-phényl-éthyl-amine a été découverte par BARGER et DALE dans l'ergot de seigle, dont elle serait le principe actif. Elle a été obtenue synthétiquement. On emploie en général sous le même nom son chlorhydrate :



$$OH — C^6H^4CH^2 — CH^2NH^2HCL.$$

Poudre cristalline presque blanche, très soluble dans l'eau en donnant une solution neutre. Il fond à 270° en se décomposant légèrement et ne laisse pas de cendres à l'incinération.

C'est un hypotenseur et un hémostatique ; il est indiqué également pour provoquer les contractions utérines lors des accouchements.

A conserver soigneusement à l'abri de la lumière.

On en injecte par voie sous-cutanée 0 gr. 005 dissous aseptiquement au moment de l'emploi dans de l'eau distillée.

M. LOEPER et ses collaborateurs ou ses élèves HERRENSCHMIDT, VARAY, VIGNALOU, ont étudié récemment l'action de la tyramine et d'autres bases aminées, telles que l'Histamine et la Tryptamine (1-2-3-4).

Des méthodes de dosage dues à A. LESURE, THOMAS (5 et 6) ont déjà permis d'éclairer l'action pharmacodynamique et thérapeutique de plusieurs de ces composés, mais leur application est encore trop récente pour que nous puissions donner à ce sujet de plus longs développements.

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U

URÉE SYMÉTRIQUE TRYPANOCIDE

Synonymes : **205 Bayer. — 309 Fourneau. — Germanine (dénom. allemande). - Moranyl (dénom. Française). — Naganol (us. vétérinaire). — Antrypol.**

1. L. TANON et E. JAMOT. — *Bul. Ac. Méd.*, 1925, XCIII, 394.
2. L. LAUNOY. — *B. S. P.*, 1930, XXXVII, 109.
3. R. WEITZ. — *F. M. N.*, 1935, 451.
4. P. LEBEAU et G. COURTOIS. — *Trait. Pharm. Chim.*, 1938, II, 602.

Ce médicament est une combinaison organique complexe, d'abord préparée par les chimistes allemands, reconstituée ensuite par FOURNEAU et ses collaborateurs ; c'est l'urée symétrique du métaaminobenzoyl-métaaminoparaméthylbenzoyl-1 naphtylamino-4-6-8 trisulfonate de sodium.

Poudre blanche, soluble dans l'eau et dans les solutions salines en donnant des solutés neutres qui peuvent être stérilisés à chaud et possèdent déjà par eux-mêmes un certain pouvoir antiseptique (3). Le moranyl est insoluble dans l'alcool.

Il donne un précipité amorphe avec les alcaloïdes (atropine, cocaïne, quinine) et des réactions de diazotation et de copulation avec l'α naphtol et la résorcine en formant des produits de couleur rouge groseille ou orange. Ces réactions permettent de faire des dosages colorimétriques et d'étudier la répartition du produit dans l'organisme et son élimination (4).

Le moranyl, qui ne contient ni antimoine, ni arsenic, ni mercure, est doué d'une activité remarquable vis-à-vis des trypanosomes parasites ; il est caractérisé par un très grand coefficient d'activité trypanocide expérimentale :

$$\frac{C}{T} = \frac{1}{275} \qquad \begin{cases} C = \text{dose minima curative} \\ T = \text{dose maxima tolérée.} \end{cases}$$

Il permet de réaliser une immunité chimique (BOSSERT et Mme de TREVISE (2). Cependant, il ne guérirait pas la trypanosomiase humaine à T. gambiense et présente des dangers à cause des lésions rénales qu'il peut provoquer ; il détermine en effet une albuminurie toxique qui disparaît ordinairement au bout de quelques mois, mais qui peut dépendre d'une lésion rénale plus profonde et entraîner la mort. Enfin, il n'a pas d'influence sur la maladie à la 3e période (1).

Les praticiens anglais ont fait des injections sous-cutanées ou intraveineuses aux doses de 0 gr. 50, 1 gr. ou 1 gr. 20 répétées à 8 jours d'intervalle, par séries de 3 à 10. L'emploi simultané du moranyl et de l'émétique a permis de guérir, comme l'association anilarsinate de sodium-émétique, des cas de trypanosomiases parvenus à la période d'invasion des centres nerveux. Les auteurs français conseillent d'administrer le produit par voie hypodermique ou intraveineuse, aux doses successives de 0 gr. 50, 1 gr., 1 gr. 50, soit 3 gr. en 3 fois, en l'espace d'une semaine et de reprendre une autre série d'injections après 15 jours de repos (3).

L'immunité procurée par une dose de 0 gr. 04 par kilog de poids corporel, en injection intraveineuse dure de 14 à 18 mois, et par une dose de 0 gr. 02, 9 mois environ (2). Le moranyl peut être employé également contre la peste et le pemphigus (4).

Le produit est présenté en ampoules scellées de 1 gr. ou de 2 gr.

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URIQUE (ACIDE)

Synonyme : **Trioxypurine 2-6-8.**

R. WEITZ. — *F. M. N.*, 1935, 20.

La préparation industrielle se fait par épuisement du guano par un alcali, précipitation par HCl et purification.

Petits cristaux blancs, losangiques, très peu solubles dans l'eau, insolubles dans l'alcool et l'éther absolus, solubles dans la glycérine, les solutions chaudes d'acétate, borate et phosphate de sodium, en présence d'alcalins.

Préconisé comme stimulant de l'appétit et tonique général, par GALLOIS, contre les abcès tuberculeux en injections locales et par TORAUDE comme antiseptique.

On pratique des injections sous-cutanées et intramusculaires de 1 cm³ d'huile stérilisée, contenant 0 gr. 15 d'acide urique finement pulvérisé, à raison d'une injection tous les 8 à 15 jours (S. LÉVY).

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UROSELECTAN A.

1. WEITZ. — *F. M. N.*, 1935, 454.

Ce corps, sel monosodique de l'acide 2 oxy-δ-iodo-pyridine acétique, est une poudre micro-cristalline jaunâtre, très soluble dans l'eau, fusible au-dessus de 200°, renfermant 42 % d'iode.

Ses solutions sont opaques aux rayons X et donnent par contraste des images utilisables pour l'artériographie et l'urographie (von LICHTENBERG).

On emploie une solution aqueuse à 40 % et on l'injecte soit dans les veines, soit dans l'uretère ou l'artère à explorer. Elle est inoffensive.

Une substance voisine, l'urosélectan B contient 51,5 % d'iode.



UROTHÉRAPIE

1. H. JAUSION, R. GIARD et G. MARTINAUD. — *Pres. Méd.*, 23 IX, 1933. In *U. P.*, 1934, t. LXXV, p. 71.

Cette méthode consiste en la réinjection au patient de ses propres urines, fraîchement émises et suffisamment aseptisées. Elle a été mise au point par JAUSION et PALÉOLOGUE en 1929.

L'urine est recueillie par simple miction, précédée d'une toilette génitale au savon liquide. La récolte aseptique par cathétérisme est à déconseiller comme une complication inutile et de nature à éloigner les sujets de la méthode. Aux urines recueillies dans un vase de verre gradué et stérile, on ajoute 1 goutte d'une solution antiseptique (de préférence phénosalyl) par cm³.

Après contact de 5 minutes environ avec l'antiseptique, l'urine est injectée par voie intramusculaire ou hypodermique, parfois même intradermique. Dans le cas d'urines louches, il est prudent de ne les introduire que dans l'hypoderme, aux fins de pourvoir à une meilleure résorption et de parer à tout risque d'abcès. Les doses sont, progressivement, de 0,5 à 5 cm³. L'intervalle séparant les injections est de 2 à 4 jours, et le nombre total des injections de 10. Ce total ne doit pas être dépassé, car le succès d'une cure se décide généralement vers la sixième injection.

Les résultats obtenus sont assez probants. Les principales indications sont les maladies de sensibilisation (aux œufs, aux poissons, spores, pollens) telles qu'urticaire, rhume des foins.

Contre-indications : colibacilloses, pyélonéphrites, anthrax, furonculose, impétigo, eczémas secs.



V

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GÉNÉRALITÉS

Les vaccins injectables sont des médicaments d'origine microbienne, destinés à prévenir ou à guérir les maladies infectieuses, en créant dans l'organisme une immunité active, c'est-à-dire en y provoquant la formation d'anticorps spécifiques de la maladie à combattre. Certains vaccins ont une action de choc, non spécifique.

Les vaccins injectables se classent comme suit :

1º Virus expérimentalement atténués et fixés.

2º Microbes tués.

3° Toxines modifiées (anatoxines).

A côté des vaccins, on utilise des toxines et des produits microbiens divers, soit comme médicaments, soit comme réactifs pour cuti ou intradermo réactions et enfin les bactériophages qui ne sont ni des vaccins, ni des sérums, mais vraisemblablement des ultravirus s'attaquant aux microbes.

Préparation des vaccins,

1° Virus expérimentalement atténués et fixés

Ils sont obtenus par des passages successifs sur animaux vivants ou sur milieux spéciaux, avec une technique particulière pour chacun d'eux.

2° Vaccins a base de microbes tués

Ils se divisent en stock-vaccins préparés à l'avance, à partir de microbes sélectionnés, mais isolés de malades quelconques, et en auto-vaccins préparés extemporanément et isolés du malade à traiter.

Stock-Vaccins

On a recours, pour tuer les microbes, à de très nombreux procédés.

Emploi de la chaleur (*Vaccins du type* Wright).

Les microbes isolés sont cultivés sur milieu approprié, puis émulsionnés dans l'eau physiologique à 8 °/₀₀, et tués par chauffage à une température variable selon les cas, mais toujours aussi basse que possible et voisine de + 60° (69).

Dans les lipo-vaccins de Le Moignic et Pinoy, les microbes tués par la chaleur sont mis en suspension dans un excipient huileux ; les cultures jeunes sont lavées, déshydratées par centrifugation prolongée, stérilisées par la chaleur vers + 60° et finalement mises en suspension homogène dans un mélange d'huiles végétales purifiées anhydres et neutres. Les lipo-vaccins se résorbent plus lentement que les autres. Leur faible toxicité permet de leur donner un titrage en corps microbiens trois ou quatre fois plus grand que celui des hydrovaccins, de les injecter à intervalles plus espacés ; enfin, l'huile préserve les corps microbiens des oxydations destruc-

trices ; le pouvoir antigénique est ainsi conservé de 12 à 18 mois (67), (68).

Emploi des agents chimiques. Vaccins fluorés de NICOLLE et BLAIZOT. — Les cultures sont tuées par émulsion dans une solution de fluorure de sodium à 7 °/oo. Après un séjour de 24 heures à la glacière, on centrifuge et on émulsionne à nouveau dans la même solution de façon à obtenir un titre de 500 × 10^6 microbes par cc.

Vaccins iodés de RANQUE et SENEZ. — Les microbes émulsionnés sont tués par addition de 1 % de solution aqueuse iodo-iodurée normale. Après 30 minutes de contact, on ajoute une solution stérile d'hyposulfite de sodium jusqu'à décoloration complète. Les microbes sont abandonnés à la sédimentation pendant 15 jours, puis centrifugés. Le liquide surnageant est remplacé par le même volume de soluté physiologique stérile.

Vaccins à la soude de MAUTÉ. — Ici, les microbes sont non seulement tués, mais liquéfiés : à une dilution de lessive de soude au 1/10e on ajoute, une quantité déterminée de substance microbienne selon qu'on emploiera le vaccin en injections sous-cutanées ou intraveineuses. En 24 heures, la soude a dissous les bactéries ; on neutralise exactement par l'acide chlorhydrique et on ajoute 0,5 % de phénol. Le vaccin obtenu est en général limpide ; s'il contient un précipité floconneux, celui-ci doit être injecté en même temps. Les vaccins de MAUTÉ titrent 1 mmgr. de corps bacillaires par cc. pour injections sous-cutanées et 1/10e de mmgr. pour les injections intraveineuses.

Les ampho-vaccins de RONCHÈSE sont des mélanges de vaccins ordinaires et de lysats vaccins à la soude (69).

Claso-vaccins de JAUSION *et* BORDE. — Les germes sont tués par l'acide sulfurique à froid, puis à chaud. Après neutralisation par le carbonate de chaux, on filtre, on ajoute 1 goutte de phénosalyl pour 2 cc., on filtre à nouveau et on répartit en ampoules (2), (3), (4).

Vaccins formolés. — Ils se préparent à partir de microbes cultivés sur milieux solides ou liquides. Les émulsions microbiennes sont centrifugées et les culots mis en suspension dans des solutions de formol. La stérilisation est obtenue par le froid. La teneur de formol (de 1/50e à 1/300e) et le séjour à la glacière varient selon les microbes en cause. On lave plusieurs fois les corps microbiens

à l'eau physiologique par centrifugation, on les numère et on les dilue ensuite au titre voulu (68).

Emploi de procédés biologiques. Vaccins lysés par le B. pyocyanique, de DUCHON. — Ils sont obtenus en lysant les cultures microbiennes par le B. pyocyanique, on filtre le milieu sur bougie et on injecte un liquide privé de microbes.

Numération des microbes. — Avant d'être tués, les microbes des émulsions vaccinales doivent être soumis à la numération, ou directe (cultures sur milieu solide, compte globules de MALASSEZ, pipettes calibrées) ou empirique (pesée ou méthode opacimétrique), afin d'ajuster ensuite le vaccin au titre voulu.

1° *Culture sur milieu solide.* — C'est le procédé le plus exact. Il faut le mettre en œuvre dès que l'émulsion est préparée, sinon le pourcentage diminue du fait de la mort ou de l'autolyse de certains germes et, d'autre part, les microbes morts non évalués contiennent cependant des antigènes.

Suivant son opacité, l'émulsion est diluée à des taux compris entre le 1/10e et le 1/10^6. On ensemence une goutte de la dilution susceptible de donner des colonies non confluentes, en tubes de bouillon gélosé, liquéfié, maintenu à + 45°, puis on coule le contenu des tubes en boîtes de PÉTRI ou de LEGROUX qu'on porte à l'étuve une fois le milieu solidifié. On compte les colonies au bout de 24 heures. Soit :

n leur nombre
t le taux de la dilution

le nombre N de microbes par cc. de l'émulsion primitive est donné par la formule :

$$N = 20 \times n \times t$$

si l'on a mesuré la goutte ensemencée au compte-goutte normal.

2° *Emploi du compte-globules de* MALASSEZ. — L'émulsion est additionnée de II ou III gouttes de formol par cc. pour tuer les germes, puis au bout d'une heure, diluée à un taux convenable comme ci-dessus. On place II ou III gouttes de cette dilution, colorée ou non par la fuchsine phéniquée, dans la cellule de l'appareil. On laisse la sédimentation des corps microbiens se faire pendant 30 minutes et on examine au microscope, muni d'un objec-

tif 7 et d'un oculaire 4 afin que le champ optique contienne exactement les rectangles du compte-globules.

On établit la moyenne « m » des microbes contenus dans 8 ou 10 rectangles ; chacun d'entre eux représente un volume de 1/100^e de mm^3. On en déduit facilement le nombre N de microbes par cc. de l'émulsion primitive sachant le taux *t* de la dilution examinée :

$$N = 10^5 \times m \times t$$

(N est donnée à plusieurs millions près).

3° *Emploi de pipettes calibrées.* — Ce sont des pipettes de précision qui donnent des gouttes correspondant à une fraction connue de mm^3. On dépose sur lame une goutte d'émulsion convenablement diluée ; on laisse sécher, on colore, puis on compte les microbes sur toute la surface d'étalement, soit « n » leur nombre, « t » le taux de dilution et « v » le volume d'une goutte rapporté au mm^3 ; le nombre N de germes par cc. d'émulsion est donné par la formule :

$$N = 10^3 \times v \times n \times t.$$

Cette méthode est peu pratique.

4° *Méthode par pesée.* — On pèse une partie du culot de centrifugation d'une culture du microbe considéré ; on en fait une émulsion que l'on numère par un des procédés qui viennent d'être décrits ; on en déduit le poids de 1×10^9 bactéries par exemple. Au moment de la préparation du vaccin, on pèse un poids déterminé de microbes qu'on dilue ensuite au taux voulu. L'emploi de creusets à plaque filtrante en verre poreux facilite l'opération.

5° *Méthode par dilutions étalons.* — C'est la méthode courante et simple, utilisée dans les établissements qui préparent les vaccins en grandes quantités ; on dispose d'une gamme de tubes de 10 mm. de diamètre, scellés à la flamme, contenant chacun 4 cc. d'émulsions dosées à 100, 150, 200, 250, 300, 400, 450, 500 millions, etc... 1 et 2 milliards et plus de microbes (tués par le formol ou le fluorure de sodium) par cc. L'émulsion à doser est diluée au 1/10^e, au /100^e, 1/1000^e, etc..., puis 4 cc. de chacune de ces dilutions sont répartis dans des tubes semblables à ceux de la gamme auxquels on les compare. On a soin d'agiter les étalons avant l'emploi, et de faire la lecture à bout de bras, près d'une fenêtre, le dos tourné à la lumière, devant un texte sur papier couché, sous verre, directe-

ment appliqué contre les tubes, ainsi que le recommande MESTREZAT.

Soit :

t le taux de la dilution ;

n le taux de l'étalon ayant la même opacité. Le titre N de l'émulsion mère est donné par la formule :

$$N = n \times t.$$

Les émulsions microbiennes ont l'inconvénient de fournir des gammes dont l'opalescence diminue avec le temps ; au contraire, l'albumine coagulée par l'acide trichloracétique donne des liquides dont l'opalescence reste fixe pendant des années. Ce procédé est dû à LEGROUX, d'après MESTREZAT. La préparation d'une gamme fixe à l'albumine s'effectue ainsi :

Trois blancs d'œufs très frais sont additionnés d'un égal volume de solution de chlorure de sodium à 8 °/oo et battus en neige ; on ajoute ensuite 3 volumes de ce même soluté et on filtre sur papier ordinaire ; on prélève les 25 premiers cc. qui passent, ce qui correspond à 0 gr. 50 d'albumine (si l'on prenait les portions suivantes du filtrat, on obtiendrait un précipité en flocons volumineux).

Ces 25 cc. dilués dans 475 cc. d'eau salée à 8 °/oo donnent une solution A à 1 gr. d'albumine par titre qu'on dilue au 1/10e (solution B à 0 gr. 10 par titre). La solution B est elle-même diluée au 1/10e (solution C à 0 gr. 01 par litre). On mesure 4 cc. de ces 2 dernières dans des tubes calibrés de 10 à 11 mm. de diamètre intérieur, en verre incolore. On leur ajoute 0,4 cc. d'acide trichloracétique au 1/3 (dont on s'est assuré au préalable qu'il ne précipite pas le chlorure de sodium) et on ferme les tubes à la lampe. Ils sont utilisables 3 jours après. En général, l'opalescence de la solution B est identique à celle d'une émulsion de 1×10^9 staphylocoques par cc. et la solution C à une émulsion de 100×16^6 staphylocoques par cc. On prépare de même les étalons intermédiaires contenant 0 gr. 02, 0 gr. 03, 0 gr. 04 et 0 gr. 05 d'albumine correspondant respectivement à 200, 300, 400 et 500×10^9 staphylocoques par cc.

Ce procédé, quoique très pratique, fournit un résultat assez approximatif (69).

Remplissage des ampoules. — Le titre de l'émulsion, une fois déterminé, on la dilue au taux voulu et le vaccin est réparti aseptiquement en ampoules préalablement stérilisées au four à flamber.

Les ampoules à large ouverture sont emplies au moyen de « l'aspiro-pipette » construite par la maison LEUNE. Les ampoules à 2 pointes sont placées, l'ouverture en bas, dans un cristallisoir, sous une cloche. On y fait le vide, le vaccin est rapidement introduit à l'aide d'un entonnoir à brome, puis on laisse rentrer l'air filtré ; le remplissage est instantané. Les ampoules sont ensuite groupées dans un linge et chauffées à + 56° au bain-marie pendant 1 heure de façon à tuer les bactéries aériennes qui auraient pu souiller le vaccin pendant la manipulation (69).

Autovaccins

Ce sont des vaccins préparés avec les germes isolés du malade à traiter ; on emploie soit du pus de furoncle (autovaccin antistaphylococcique), soit des colonies de colibacilles provenant du culot de centrifugation des urines (autovaccin anticolibacillaire), soit une parcelle de crachat ne contenant pas de bacilles de Koch (autovaccin polyvalent contre les affections bronchiques).

Nous recommandons la technique suivante : le produit microbien est largement ensemencé sur 2 ou 3 tubes de gélose ; au bout de 24 heures de culture à + 37°, on émulsionne les colonies avec de l'eau phéniquée à 5 °/₀₀. L'émulsion est soumise à la numération par le procédé de la gamme à l'albumine coagulée, précédemment décrit, puis tyndallisée par 3 chauffages à + 65°, à 24 heures d'intervalle. On contrôle très soigneusement sa stérilité par ensemencement sur bouillon et sur gélose. L'émulsion-mère est diluée à des taux progressifs et répartie en ampoules de 2 cc. préalablement stérilisées, ainsi que l'indique le tableau suivant :

Nombre de germes pour 1 cc.	Nombre d'ampoules de 2 cc. à préparer
100×10^6	1
500×10^6	2
1×10^9	3
$2,5 \times 10^9$	3
5×10^9	3
$7,5 \times 10^9$	4
10×10^9	4
	Total : 20

Le remplissage des ampoules se fait au moyen d'une seringue

stérile, d'un volume suffisant pour contenir toute l'émulsion à répartir. Un manchon de taffetas gommé ou de cellophane lié autour du corps de la seringue d'une part, et de l'autre, autour du sommet du piston, préserve ce dernier des souillures extérieures, et se plisse sur lui-même au fur et à mesure que le piston s'enfonce. On flambe la pointe de l'ampoule, puis l'aiguille de platine adaptée à la seringue et on scelle à la flamme chaque ampoule dès qu'elle est pleine.

Le traitement comprend l'injection sous-cutanée d'une ampoule tous les 2 jours, en commençant par le taux le plus faible pour tâter la susceptibilité du malade. Si l'on n'observe aucun incident, mais à cette condition seulement, on peut laisser de côté les dilutions faibles et injecter d'emblée les dilutions concentrées.

3° ANATOXINES

Les anatoxines sont, d'après RAMON, leur inventeur, des corps obtenus par l'action combinée du formol et de la chaleur sur les toxines ; on les prépare à partir de bouillons de culture privés de microbes, que l'on additionne de 3 à 4 pour ‰ de formol du commerce et qu'on porte ensuite à l'étuve à + 39° pendant 15 à 30 jours. On contrôle ensuite leur innocuité et leur valeur antigénique.

Les anatoxines sont complètement dépourvues de toxicité, mais elles ont gardé des toxines le pouvoir antigène et floculant vis-à-vis de l'antitoxine ; ces deux propriétés ont entre elles un parallélisme étroit et les anatoxines qui ont le pouvoir floculant le plus élevé sont celles qui donnent le pourcentage maximum de sujets immunisés (RAMON et NÉLIS).

Les anatoxines sont stables et ne reviennent jamais à l'état de toxines. Elles peuvent être chauffées à + 100° sans perdre leur pouvoir antigène. Leur altération ne commence qu'à + 105°, celle des toxines à + 75°, ce qui a permis à RAMON d'affirmer que l'anatoxine n'est pas une toxine modifiée, mais un corps entièrement nouveau (69).

Les bouillons à partir desquels on prépare les anatoxines sont toujours des milieux complexes ; on peut les purifier en les traitant par l'acide trichloracétique à pH = 3,5 ; l'immense majorité des substances inactives reste en solution et l'anatoxine préci-

pite. En la redissolvant dans un alcali faible, on peut récupérer la presque totalité du principe actif (5).

4° Toxines et produits microbiens divers

Endococcine

Dès 1918, Vallée et Louis Bazy ont substitué aux vaccins microbiens d'une variabilité regrettable et difficilement titrables, des extraits microbiens préparés selon une technique analogue à celle qui a été utilisée pour la préparation de l'ancienne tuberculine de Koch (voir plus loin). Ils ont obtenu ainsi un extrait microbien total, stable, inaltérable, résistant au chauffage à + 100°, et dont les propriétés se conservent intégralement pendant plusieurs années. Ils lui ont donné le nom d'endococcine qui rappelle son origine et sa constitution. Pour l'emploi, l'endococcine brute est diluée dans l'eau phéniquée à 5 pour °/oo.

Ils ont publié deux cas de lésions péritonéointestinales dans lesquels le traitement habituel restant impuissant, il a suffi d'une injection sous-cutanée de 0,5 cc. d'endococcine pour déclancher le processus qui a abouti très rapidement à la guérison (1).

Toxines, etc.

Les toxines telles que la toxine diphtérique, la tuberculine, les extraits microbiens ont chacun leur mode de préparation particulier. Ces produits sont étudiés à la suite du vaccin actif contre le microbe dont ils dérivent.

5° Bactériophages.

En 1917, D'Hérelle constata que l'addition d'une émulsion filtrée de selle de dysentérique convalescent à une culture jeune de B. dysentériques, donne après séjour à l'étuve un liquide parfaitement limpide ; sur milieu solide, on obtient des plages claires dans l'enduit bactérien. Ce phénomène est dû à la lyse des bactéries, déjà entrevue par Twort, en 1915, sur les staphylocoques. Fait remarquable, cette lyse est transmissible en série. Il y a aussi des principes lytiques, des « Bactériophages » spécifiques d'autres bactéries : colibacilles, B. d'Eberth, staphylocoques, entérocoques, etc...

La nature du bactériophage est très discutée : pour d'Hé-

RELLE et HAUDUROY, ce serait un ultravirus (théorie exogène), pour BORDET, ce serait la conséquence d'une mutation aboutissant à l'autolyse et à la libération de substances lytiques (théorie endogène). Pour WOLLMANN, le phénomène de la lyse serait lié à un « gène », facteur héréditaire se transmettant de cellule en cellule (49).

Le bactériophage est filtrable et ultrafiltrable, grâce à sa charge électrique négative ; le diamètre des corpuscules est de 20 à 30 mμ. Il résiste aux températures très basses, telles que celle de l'air liquide ; sa température d'action optima est + 37° ; il est d'autant plus thermorésistant qu'il est plus virulent, mais en tous cas, il meurt aux environs de + 100°. Les radiations qui détruisent les bactéries le détruisent également, et il est sensible à certains agents chimiques : il est tué par le fluorure de sodium à 1 % en 15 jours, et par le sulfate de cuivre, l'éther, l'acétone, l'acide phénique, les acides lactique et oxalique, le formol, l'antiformine, la glycérine, au bout de temps plus ou moins longs.

Le bactériophage ne se développe que sur des microbes vivants et surtout jeunes ; sa vitalité est très grande, il vit plusieurs années à l'obscurité, en ampoules scellées. Sa virulence est très variable et il peut s'adapter aux agents chimiques qui le détruisent (66).

On voit donc que le bactériophage, corpuscule vivant infravisible, se multipliant aux dépens de la substance microbienne qu'il détruit, n'est ni un médicament, ni un sérum, ni un vaccin, mais un ultra-microbe. Il vit normalement dans l'intestin, en symbiose avec le B. coli (D'HÉRELLE).

Pour agir, il doit posséder un maximum de virulence et la bactérie attaquée doit être sensible, jeune, vivante et normale. Ces caractères existent au début de l'évolution des infections ; il faut donc employer le bactériophage comme premier traitement. Il y a identité absolue entre la bactériophagie spontanée qui est à la base de la guérison spontanée d'une infection et la bactériophagie thérapeutique, ainsi que l'ont montré les travaux d'HÉRELLE sur le choléra (1927), et de RAIGA sur les ostéomyélites (1937). Lorsqu'on applique la bactériophagie thérapeutique, il faut placer le malade dans les conditions semblables à celles des cas de guérison naturelle les plus favorisés.

Les facteurs relatifs au microbe à détruire ont déjà été exposés ; ceux qui concernent le milieu humoral sont, d'une part, l'hypergly-

cémie et, d'autre part, les antiphages, propriétés du sérum sanguin, inhibitrices de la bactériophagie naturelle ou provoquée. On lutte contre l'hyperglycémie par la thérapeutique insulinienne et le régime, et contre les antiphages, par l'autohémothérapie (65).

On isole le bactériophage par culture du microbe à détruire sur bouillon à l'étuve à + 37° pendant 6 à 12 heures ; on filtre sur papier, puis à la bougie de porcelaine L5. Le filtrat limpide ainsi obtenu attaque les cultures de l'espèce microbienne à laquelle il correspond. On voit au microscope les bactéries se gonfler, se dissocier par éclatement et enfin disparaître. ROSENTHAL a donné, en 1930, des techniques de préparation de bactériophages à l'état sec ou liquide. Il en existe de mono ou de polyvalents actifs sur les colibacilloses, la dysenterie bacillaire, la fièvre typhoïde, les affections à entérocoques, la furonculose, diverses staphylococcies cutanées et les rhinopharyngites (67). On prépare des stock-bactériophages et des autobactériophages.

MONTANT et GUINCHARD ont traité les affections staphylococciques du membre supérieur par le bactériophage en injections dans l'artère humérale. Assez souvent, après l'injection, le malade accuse une sensation de fraîcheur dans l'avant-bras et les doigts ; la plupart du temps, un fourmillement caractéristique qui peut durer jusqu'à 25 minutes ; il y a ensuite sédation de la douleur, régression de la lymphangite et de l'adénite ; l'action sur l'abcès lui-même est moins prononcée. Dans certains cas, une seule injection de 10 cc. suffit (64).

Le traitement par la méthode de RAIGA consiste, après autohémothérapie, à faire 1 ou 2 injections intraveineuses à 4 jours d'intervalle (65). Ce procédé a été critiqué par certains auteurs comme provoquant des chocs dangereux. Généralement, on pratique 3 à 4 injections sous-cutanées de 1 à 3 cc. tous les jours ou tous les 2 jours. Elles provoquent parfois de petites réactions locales sans gravité qui disparaissent en quelques heures ; il n'y a jamais de réaction générale. Pendant le traitement, on ne doit faire usage d'aucun antiseptique. Toute ampoule ouverte doit être immédiatement utilisée.

LÉGISLATION

Les vaccins et autres produits d'origine microbienne sont soumis aux mêmes dispositions légales que les sérums (voir page 525).

VACCIN ANTICHANCRELLEUX

Le chancre mou ou chancrelle est dû au streptobacille de DUCREY et ce sont les travaux de Ch. NICOLLE qui, entre autres, ont permis la préparation d'un vaccin curatif. Le vaccin antistreptobacillaire, spécialisé sous le nom de DMELCOS, est une émulsion de bacilles, titrée biologiquement et d'activité constante. Il contient 225×10^6 germes par cc. Son effet est d'autant plus net que le traitement est plus précoce.

Il est préparé pour être injecté à titre curatif, uniquement par voie intraveineuse. Une réaction générale assez marquée suit chaque injection. Les doses croissent de 1 à 3 cc. et seront espacées de 2 ou 3 jours.

Il permet, de plus, de provoquer des accès fébriles à $+ 39^o$, $+ 40^o$ et on l'emploie comme pyrétothérapie de la paralysie générale. On débutera par 0,5 cc. en augmentant progressivement les doses par demi-centimètre cube jusqu'à ce qu'on obtienne la réaction désirée. On a pratiqué jusqu'à 43 injections (67).

Enfin, en injection intradermique, il sert de réactif spécifique de la maladie.

VACCIN ANTICHOLÉRIQUE

Le vaccin anticholérique est préventif et se prépare à partir de vibrions cholériques sélectionnés, très virulents, et dont le pouvoir antigène est considérable. On les cultive sur bouillon gélosé, puis on les centrifuge et l'émulsion du culot dans l'eau physiologique à 8 $^o/_{oo}$ est stérilisée par chauffage à $+ 56^o$ pendant 1 heure. Elle est titrée à 4×10^9 de germes par cc. (69).

Ce vaccin est délivré en ampoules de 2 cc. par boîtes de deux, portant la date limite d'utilisation. L'Institut Pasteur le fournit également en ampoules de 10 ou 20 cc. pour les vaccinations collectives. La vaccination se fait en 2 injections, strictement sous-cutanées, de 1 et 2 cc. pour les adultes, de 0,5 et 1 cc. pour les enfants au-dessous de 12 ans, avec un intervalle de 7 à 10 jours ; la revaccination a lieu en une seule fois aux doses de 1 cc. 5 pour les

N. B. — On trouvera dans les ouvrages cités (71), (72) de plus amples détails sur le bactériophage, les virus et ultra-virus et notamment sur leur constitution chimique.

adultes, 1 cc. pour les enfants. La durée de l'immunité est de 1 an au moins (70).

VACCINS ANTICOLIBACILLAIRES

Le stock-vaccin anticolibacillaire curatif se prépare par culture de colibacilles sur gélose, puis émulsion des colonies que l'on tue par la chaleur ; les ampoules sont titrées à 1×10^9 microbes par cc. (69).

L'autovaccin peut se préparer soit selon la technique que nous avons indiquée au paragraphe « *Auto-vaccins*, soit selon LARGENT, LAMARE et MOREAU, en atténuant les germes par le formol. Les ampoules sont titrées à 500×10^6 germes par cc. (6).

Selon WEINBERG et KREGNER les résultats les plus rapides sont fournis par l'endotoxine obtenue en soumettant les corps microbiens centrifugés et repris par l'eau distillée neutre pendant plusieurs jours, à une température de + 50° (7).

VACCINS ANTICOQUELUCHEUX

On utilise à titre préventif et curatif les vaccins suivants :

1° *Néo-Dmétys*. — Ce vaccin est stabilisé par le fluorure de sodium ; il contient 250×10^6 bacilles de BORDET et GENGOU par cc. On pratique 3 injections à 48 heures d'intervalle.

2° *Vaccin iodé de* RANQUE et SENEZ. — C'est une émulsion en solution physiologique de 250×10^6 bacilles de BORDET et GENGOU, stérilisée par $1/10^4$ d'iode, neutralisé ultérieurement par une trace d'hyposulfite de soude. On pratique 3 injections sous-cutanées de 0,5, 1 et 1,5 cc. à intervalles de 4 jours.

CHEVREL a traité la coqueluche en faisant tous les 2 jours une injection de vaccin et une injection de 1 cc. d'éther chaque fois, en des points différents (67).

VACCIN ANTIDIPHTÉRIQUE

Le vaccin antidiphtérique est une anatoxine. Une souche de b. diphtériques N° 8 de PARK et WILLIAMS conservée en bouillon recouvert d'huile de vaseline est ensemencée sur un milieu préparé comme suit :

Une macération de viande de veau, prolongée 24 heures à la chambre froide, est additionnée de peptone Martin ; après avoir ajusté le pH à 8,2 on filtre, on répartit en couche mince dans des fioles de FERNBACH et on tamponne par addition d'acétate de soude ; on stérilise et on ajoute aseptiquement 2 °/₀₀ de glucose et 6 °/₀₀ de maltose.

Après 11 jours d'étuve, on filtre sur bougie et la toxine est transformée en anatoxine par addition de 5 cc. de formol du commerce par litre et séjour de un mois à + 39° ou + 40° (11). On contrôle ensuite l'innocuité et la valeur immunisante du produit.

1° *Innocuité.* — Deux cobayes de 300 gr. ayant reçu chacun sous la peau 5 cc. d'anatoxine doivent demeurer parfaitement sains pendant 1 mois.

2° *Valeur immunisante.* — On l'exprime en fonction de la quantité d'unités antitoxiques qui amène la floculation initiale de 1 cc. d'anatoxine. Les détails de cette méthode sont indiqués à l'article Sérums, page 517 :

Les propriétés floculante et immunisante de l'anatoxine purifiée en faisant agir l'acide trichloracétique sur le bouillon anatoxique brut, sont sensiblement de même ordre que celles de ce bouillon anatoxique lui-même. Le rendement en unités antigènes peut atteindre 96 % et les immunités conférées par l'anatoxine diphtérique purifiée et par l'anatoxine ordinaire sont pratiquement équivalentes (10).

Une anatoxine est efficace quand elle titre 10 unités antitoxiques au cc. Actuellement, on emploie un produit dont la valeur antigène est au moins de 30 U. A. par cc. et ceci depuis que la culture du B. diphtérique sur milieu tamponné à l'acétate de soude fournit une toxine beaucoup plus active (69).

On a d'abord vacciné les sujets en leur injectant en premier lieu 0,5, puis 2 fois 1 cc. d'anatoxine à 10 U. A. au cc. (69) ; puis 2 fois 2 cc. d'anatoxine à 16 U. A. ; puis 1 et 2 cc. d'anatoxine à 20 U.A., soit au total 60 U. A. (9). La nouvelle anatoxine de l'Institut Pasteur à 30 U. A. au cc. permet de ne faire que deux injections, la première de 1 cc., la seconde de 2 cc. Quel que soit le titre, les injections sont faites à 3 semaines d'intervalle. Six mois ou un an après la dernière, on pratiquera une injection de rappel de 2 cc.

L'on a observé chez 10 % de sujets vaccinés de légères réactions locales ou générales. Elles sont éphémères et ne surviennent que

chez les adolescents ou les adultes. La vaccination antidiphtérique est contre-indiquée chez les individus atteints de maladies fébriles ou d'infections cutanées.

Le pourcentage des sujets immunisés déterminé par la réaction de SCHICK, est passé de 95 à 99 %, à mesure que la méthode s'est perfectionnée. L'immunité apparaît après la première injection et n'est complète qu'après la dernière ; elle dure toute la vie. La vaccination par l'anatoxine antidiphtérique peut être appliquée aux enfants dès la fin de la 1re année ; elle est à recommander dans toutes les collectivités.

L'anatoxine diphtérique est délivrée en ampoules de 10 cc. pour vaccinations collectives ou en boîtes contenant une ampoule de 1 cc. et 2 ampoules de 2 cc. pour vaccinations individuelles (70). Pour éviter les confusions, elle est additionnée de bleu de méthylène ; sous l'influence réductrice du milieu, certaines ampoules verdissent ou se décolorent, ce qui est sans importance, car elles se recolorent à l'air (69).

Il existe des vaccins associés contenant de l'anatoxine diphtérique :

1° Vaccin associé antidiphtérique-antitétanique.

2° Vaccin associé antidiphtérique-antityphoparatyphique.

3° Vaccin associé antidiphtérique-antitétanique antityphoparatyphique.

Les détails les concernant sont indiqués au paragraphe « Vaccins associés », page 645.

Toxine diphtérique pour réaction de SCHICK.

La toxine diphtérique préparée comme il a été dit plus haut, sert à la réaction de SCHICK, procédé clinique pour déterminer la réceptivité des sujets à la diphtérie. Elle consiste à injecter dans le derme une dilution de toxine stabilisée préparée de telle sorte que le volume injecté (0,1 cc.) renferme 1/50e de la dose mortelle en 4 jours, pour un cobaye de 250 gr. en injection sous-cutanée.

Chez les sujets réceptifs à la diphtérie, on voit apparaître 24 à 48 heures après l'injection une zone de rougeur bien limitée avec une infiltration œdémateuse plus ou moins marquée, présentant parfois un centre nettement papuleux ; le maximum atteint vers le 4e jour dure quelques jours encore pendant lesquels l'épiderme devient brunâtre, puis il y a une desquamation suivie d'une pigmentation persistant plusieurs semaines.

Dans quelques cas, l'injection produit une fausse réaction due aux protéines contenues dans le bouillon. On la distingue facilement de la réaction véritable en injectant 0,1 cc. de la dilution de toxine préalablement portée à + 100°. On voit apparaître en quelques heures, au point d'injection, une rougeur mal limitée, débordant plus ou moins l'aire occupée par le liquide injecté ; le maximum est atteint en 36 à 48 heures.

On peut observer chez le même sujet la combinaison de la vraie et de la fausse réaction ; au point d'injection de la dilution de toxine non chauffée, on observe l'apparition précoce d'une large zone de rougeur à contours estompés avec en son centre une tache plus rouge, bien limitée, avec infiltration des tissus et centre papuleux. Puis la zone externe pâlit rapidement tandis que la zone interne devient brune, desquame et se pigmente.

Pratiquement les injections intradermiques se font à la face externe de la région deltoïdienne avec une seringue en verre et en métal ; la tige du piston est graduée au 1/10e de cc. et porte un curseur ; les aiguilles sont en acier de 15 mm. × 5/10 de mm. à biseau court.

La réaction doit être lue le 6e ou le 7e jour après l'injection :

1° S'il n'y a aucune réaction à droite (injection de toxine non chauffée) ni à gauche (toxine chauffée), la réaction est négative, le sujet est réfractaire à la diphtérie.

2° S'il n'y a aucune réaction au bras gauche et s'il y en a une au bras droit, la réaction vraie est positive, le sujet est réceptif à la diphtérie.

3° S'il y a une réaction des deux côtés, à contours irréguliers et estompés, très atténuée vers le 6e ou le 7e jour, on se trouve devant une fausse réaction, le sujet est réfractaire à la diphtérie.

4° S'il y a une réaction au bras gauche comme en 3°, et au bras droit, une rougeur à contours nets, à centre légèrement papuleux, suivie de desquamation et de pigmentation, on a une réaction vraie avec fausse réaction ; le sujet est réceptif à la diphtérie.

Le nécessaire délivré par l'Institut Pasteur, uniquement sur ordonnance médicale, renferme deux ampoules, l'une de dilution de toxine non chauffée, l'autre de dilution de toxine chauffée. La quantité à injecter dans le derme est exactement de 0, 1 cc., toute autre quantité fausse la réaction. La date limite d'utilisation est indiquée sur chaque boîte (70).

VACCIN ANTIDYSENTÉRIQUE

On avait longtemps cru impossible la vaccination contre la dysenterie bacillaire par voie parentérale (12), mais BLANC et CAMINOPIETROS ont pu vacciner de nombreux sujets, les uns contre le B. de FLEXNER, les autres, contre le B. de SHIGA, soit par voie buccale, soit par injection sous-cutanée de bacilles tués ou vivants. Ces derniers vaccins ont été préparés avec des cultures sur tubes de gélose sèche suivant la technique décrite par eux (14). La vaccination par injection de bacilles vivants est inoffensive pour le vacciné et pour la collectivité, car les vaccinés ne deviennent pas porteurs de germes. Elle est efficace puisqu'aucun des vaccinés n'a réagi à l'inoculation d'épreuve malgré sa sévérité, alors que les non vaccinés, ou les sujets vaccinés avec des microbes tués, se sont infectés en presque totalité (13).

VACCIN CONTRE L'ENCÉPHALITE ÉPIDÉMIQUE

Le virus-vaccin de LEVADITI contre l'encéphalite épidémique a été isolé en 1920. Amené par de nombreux passages sur le lapin à une virulence élevée et fixe, il a perdu toute activité sur le névraxe de l'homme. Il est constitué par une émulsion de centres nerveux des animaux mis en expérience et il est atténué par un long séjour à la glacière. L'injection est faite par voie rachidienne (68).

VACCINS CONTRE LA FIÈVRE JAUNE

Le virus amaril a été isolé en 1927 par A. STOKES, à Lagos (Nigeria) et quelques semaines plus tard par SELLARDS, MATHIS et LAIGRET à Dakar. C'est la souche de Dakar, dite souche française, qui sert à préparer le vaccin.

Le vaccin de LAIGRET est le virus amaril modifié dans sa virulence à la suite de passages intracérébraux chez la souris blanche. Il est en beaucoup de points comparable au virus pastorien de la rage. La vaccination antiamarile s'opère donc, comme la vaccination antirabique, avec un virus vivant. Les cerveaux des souris sacrifiées au moment de la paralysie sont atténués par vieillissement à la température ordinaire pendant 4, 2 ou 1 jour de manière

à obtenir trois échelons de virulence, trois vaccins de plus en plus actifs que l'on injecte à l'homme, à intervalles de 20 jours.

Après leur atténuation, les cerveaux peuvent être conservés en glycérine au frigorifique et simplement broyés au moment de l'emploi, comme les moelles rabiques. Pour permettre le transport, surtout dans les pays chauds, on a été amené à dessécher les vaccins et ils sont livrés en poudre dans des ampoules privées d'air. Ce conditionnement assure une conservation de plusieurs mois à — 15°, de 3 semaines à la température ordinaire. Chaque vaccin, avant d'être livré, est titré, c'est-à-dire qu'on l'éprouve sur plusieurs lots de souris à des dilutions de plus en plus étendues.

LAIGRET a vu que 33 % des sujets donnaient un sérum protecteur après la 1re inoculation, 90 % après la 2e et 100 % après la 3e. L'immunité acquise dure plus de 2 ans ; pour la renforcer, on pourrait faire une réinoculation unique du vaccin le plus actif (15).

L'auteur a, depuis, perfectionné sa technique et emploie un vaccin phosphaté enrobé de jaune d'œuf préparé comme suit : broyer avec 1 gr. 25 de phosphate un cerveau de souris paralysée, préalablement mis en glycérine et atténué à + 20° ; incorporer à la poudre-mère 4 cc. de jaune d'œuf et dessécher la pâte ainsi obtenue jusqu'à consistance dure et compacte ; la masse est pulvérisée et conservée sous vide en tube scellé à la glacière. Ce vaccin doit tuer les souris par injection intracérébrale aux dilutions de 1 /100e et de 1 /1000e et les laisser vivantes à la dilution de 1 /10000e.

Cette méthode est appliquée en A. O. F. depuis 1934. Bien qu'ayant fourni la preuve de son efficacité, elle est un peu compliquée et on a tendance à la remplacer par celle des scarifications cutanées (19). De plus, le virus cultivé sur cerveaux de souris risque de provoquer des réactions méningées et pour les éviter, il faudrait donner la préférence au virus cultivé sur culture d'embryon de poulet (16). A l'Institut Pasteur de Paris, on pratique les 2 méthodes, chacune en une seule injection (17).

VACCINS ANTIGONOCOCCIQUES

Ils renferment tantôt des gonocoques vivants, tantôt des gonocoques tués, soit par le fluorure de sodium (NICOLLE et BLAIZOT), soit par l'iode (RANQUE et SENEZ), soit par la chaleur (Institut

Pasteur, Lumière et Chevrotier), soit par les rayons ultra-violets (Renaud), tantôt enfin des germes différents, à l'exclusion du gonocoque (67).

Le vaccin de l'Institut Pasteur se prépare en cultivant plusieurs souches sur sérum gélosé. Les diplocoques sont émulsionnés, puis tués par chauffage à + 60° durant une heure. L'émulsion est titrée à 4×10^9 germes par cc.

Dans les cas d'uréthrite aiguë, faire 6 injections sous-cutanées de 1/4, 1/2, puis 1 cc. tous les 2 jours, dans la région sus-épineuse. Après une période de repos, et même si l'on a obtenu un succès apparent, il faut pratiquer une nouvelle série d'injections en commençant par 1 cc. et en augmentant progressivement jusqu'à 2 cc. si possible.

Les complications aiguës ou chroniques (cystite, salpyngite, ophtalmie, etc.) seront traitées avec précaution en débutant par 1/10e, puis 1/4 de cc. etc... On continuera suivant les réactions du malade jusqu'à complète guérison (69).

Le vaccin antigonococcique de Nicolle et Blaizot est une émulsion fluorurée, légèrement opalescente ; elle contient non seulement des Diplocoques de Neisser, mais d'autres cocci, des Synocoques qui existent dans l'écoulement uréthral et que l'on retrouve dans les complications de la blennorragie. Il existe sous deux formes, le Dmégon et le Néo-Dmégon, de même richesse bactérienne, mais différant par leur liquide conservateur. Chaque ampoule de 1 cc. contient 275×10^6 corps microbiens dont 50×10^6 gonocoques de plusieurs races et 225×10^6 Synocoques.

Les ampoules sont de deux sortes et renferment des groupements différents de races microbiennes ; on injecte alternativement une ampoule de chaque catégorie par voie intramusculaire après forte agitation. L'injection sous-cutanée est douloureuse selon Nicolle, quoique d'autres praticiens aient employé cette voie sans inconvénients ; l'injection intraveineuse est dangereuse.

Il existe encore d'autres formes de vaccins antigonococciques : le lipo-vaccin atténué par le froid, vaccin lysé par le B. pyocyanique, vaccin sans gonocoques ne contenant que la flore associée (67).

VACCIN ANTIMÉLITOCOCCIQUE

La vaccination préventive de l'homme contre B. mélitensis paraît être une nécessité absolue dans les milieux infectés de mélitococcie animale. Le vaccin utilisé à titre préventif est constitué par une suspension dans l'eau physiologique d'un mélange de trois races de B. mélitensis, d'origine humaine, bovine et caprine et d'une race de B. abortus. On pratique 2 injections sous-cutanées à 8 jours d'intervalle (20).

VACCIN ANTIMÉNINGOCOCCIQUE

Le vaccin antiméningococcique de l'Institut Pasteur est une suspension dans l'eau physiologique à 8 ‰ de différents types de méningocoques (A, B, C) soigneusement sélectionnés d'après leur pouvoir antigène. La stérilité du vaccin est obtenue par un chauffage d'une heure ne dépassant pas pour chaque souche la température minima capable de déterminer la mort de tous les germes.

Le vaccin est dosé à 6×10^9 germes par cc. La vaccination préventive peut être réalisée en 2 injections : 1 cc., puis 2 cc. Il est cependant préférable de faire une 3e injection en augmentant la dose jusqu'à 3 cc. si l'état du sujet le permet. Chez les enfants au-dessous de 12 ans, la vaccination pourra être faite en 3 injections de 0,5, 1 et 1,5 cc. On laissera un intervalle de 8 à 10 jours entre chacune d'elles.

Ce vaccin peut être employé avec succès dans les cas de méningite cérébrospinale où une sérothérapie tardive et insuffisante n'a pas donné de bons résultats ; il est particulièrement indiqué dans les cas de méningococcémie. En règle générale, on commencera par une dose faible (0,5 cc.) et s'il se produit une réaction générale appréciable, on attendra qu'elle soit éteinte pour faire une nouvelle injection (70).

En période épidémique, on obtient des résultats heureux en employant un vaccin frais préparé à partir de la souche de méningocoques isolée par culture du liquide céphalo-rachidien des premiers malades (21).

VACCIN ANTIPESTEUX

Le vaccin de l'Institut Pasteur est constitué par une émulsion de B. pesteux tués par le formol et titrée à 3×10^9 par cc. Il est livré en ampoules de 10 cc.

On l'injecte à la dose de 1 cc. dans la région scapulaire ou sous la peau du flanc. Une seule injection peut déjà, après un délai de quelques jours, préserver de la peste ; cependant quand l'épidémie sévit d'une façon particulièrement sévère, il est prudent de pratiquer, après 3 à 5 jours, une 2e injection de 2 cc. et même une 3e de 4 cc. (70). L'immunité ainsi acquise dure jusqu'à 5 mois.

Le personnel soignant les pestiférés doit être soumis à la séro-vaccination qui consiste à injecter 10 cc. de sérum, ce qui confère une immunité immédiate de 10 jours, et 24 heures après, à faire la première injection de vaccin (69).

Girard et Robic emploient une souche de B. de Yersin vivants de virulence atténuée. Ils ont confirmé les conclusions de Yersin et Carré, Rolle, Strong, Fornario, d'après lesquelles on ne peut immuniser solidement le cobaye qu'avec des germes vivants, de virulence affaiblie. Ils ont obtenu par le seul repiquage sur gélose, à la température du laboratoire, chaque mois pendant plusieurs années, une atténuation du pouvoir pathogène de certaines souches de b. pesteux, telle que des cobayes peuvent en recevoir de fortes doses sous la peau sans manifester le moindre trouble.

L'une de ces souches (E. V.) isolée en 1926 d'un cas de peste bubonique à Tananarive, a été entretenue par repiquages mensuels entre + 18° et + 25°. Pendant 3 ans, elle s'est montrée totalement avirulente pour les animaux de laboratoire ; elle est, de plus, incapable de créer chez l'animal une infection chronique et d'en faire un porteur de germes ; l'immunité est constamment obtenue par une seule injection sous-cutanée de vaccin.

Les essais sur l'homme ont été extrêmement encourageants et les documents portant sur 15.000 vaccinations concordent pour attribuer à cette méthode une efficacité incontestable.

« Jamais un vaccin vivant ou mort n'a donné chez le cobaye les résultats obtenus avec le virus-vaccin E. V., mais il est à présumer que ce germe ne gardera pas indéfiniment ses propriétés antigènes et il est possible qu'on soit appelé à l'abandonner. Tou-

tefois, ce procédé restera toujours sous l'étroite dépendance des propriétés individuelles de souches longuement étudiées et soumises à un contrôle rigoureux et permanent » (22).

VACCINS ANTIPNEUMOCOCCIQUES

Le vaccin antipneumococcique de l'Institut Pasteur, préventif et curatif, est à base de différents types de pneumocoques, sélectionnés pour leur pouvoir antigénique. Ils sont cultivés sur eau peptonée gélosée, puis centrifugés et tués par chauffage à + 60° durant 1 heure. Le titre est de 8×10^9 par cc. (69).

La vaccination préventive peut être réalisée en deux injections : 1 cc., puis 2 cc. ; il est cependant préférable de faire une troisième injection en augmentant la dose suivant la sensibilité du sujet jusqu'à 3 cc. On obtient ainsi une immunité solide et durable. Chez les enfants au-dessous de 12 ans, la vaccination pourra être faite en trois fois aux doses de 0,5, 1 et 1,5 cc. On observera un repos de 8 à 10 jours entre chaque injection (70).

On a préparé contre les complications pulmonaires de la grippe un vaccin contenant pneumocoques, streptocoques, B. de Pfeiffer et des échantillons de micrococcius catarrhalis. Il permet la vaccination des personnes saines en milieu épidémique et le traitement des malades avant l'apparition des complications pulmonaires. Il est réparti en ampoules de 2 sortes renfermant des races microbiennes différentes. On en fait des injections alternées dans les muscles de la fesse jusqu'à guérison.

Le vaccin de Minet est un stock-vaccin mixte comprenant pneumocoques, streptocoques et staphylocoques (67).

VACCINS ANTIRABIQUES

Pasteur et Roux ont mis au point la vaccination antirabique à l'aide d'un virus-vaccin fixé par passages successifs sur le névraxe du lapin et atténué par vieillissement.

A partir d'une moelle de chien enragé que l'on inocule dans le cerveau d'un lapin, on prépare un virus fixe déterminant la mort des témoins en 8 à 12 jours, et on l'entretient par passages sur le cerveau du lapin. L'animal mort, on prélève la moelle avec de rigoureuses précautions d'aseptie, au moyen d'un mandrin métallique. On la divise en 3 tronçons que l'on suspend au bout d'un

fil dans un flacon stérile. Le flacon possède une tubulure inférieure permettant l'introduction de quelques cylindres de potasse qui dessèchent le courant d'air passant sur la moelle.

Les flacons sont placés dans une chambre à + 22°, à l'obscurité totale, pour que le virus soit atténué uniquement par la conservation à l'exclusion de la lumière. L'atténuation est proportionnelle au temps ; on n'a pas intérêt à dépasser 11 à 12 jours.

Le traitement s'effectue comme suit : des fragments de moelle de 2 à 4 mm. coupés avec des ciseaux stériles sont réduits en pâte fine au mortier de verre, puis émulsionnés dans l'eau physiologique et l'on injecte cette émulsion sous la peau de l'abdomen. On commence par des moelles conservées pendant 9, 8, puis 7 jours, avirulentes pour le lapin, qui préparent l'inoculation de moelles virulentes conservées pendant 5, 4 et 3 jours. La durée du traitement est de 15, 18 ou 21 jours, selon l'importance des morsures. L'immunité acquise chez l'homme le 22e jour après la dernière injection, persiste de 1 à 5 ans. Ce traitement n'est possible que grâce à la longueur d'incubation de la maladie.

Il ne faut faire traiter que les sujets vraiment mordus, porteurs d'une plaie si petite soit-elle, mais éliminer ceux qui n'ont subi qu'une contusion. On nettoiera d'abord la plaie à l'eau oxygénée, à l'exclusion de tout autre antiseptique qui pourrait provoquer une nécrose et faciliter ainsi l'inoculation du virus, puis on fera mettre en œuvre le traitement tel qu'il vient d'être décrit (69).

Le traitement purement pastorien de la rage n'est applicable que dans les Instituts Pasteur ; la tendance actuelle est de décentraliser la vaccination antirabique et de la pratiquer au domicile du mordu, à l'aide du vaccin phéniqué ; PASTEUR ayant émis l'idée que la dessiccation ne change pas la qualité, mais bien la quantité du virus rabique, HOGYES proposa l'atténuation par la dilution et suggéra que la vaccination par des moelles non virulentes serait un progrès inappréciable de la prophylaxie de la rage. Ceci a fait apparaître toute une série de procédés et en particulier celui des vaccins phéniqués, préconisé par de nombreux auteurs. Actuellement, cette méthode compte à elle seule, pour l'ensemble du globe, plus de sujets vaccinés que toutes les autres réunies.

REMLINGER et BAILLY ont préparé leur vaccin selon la technique suivante : le virus employé est le virus fixe de Tanger, exclusivement paralytique dont les propriétés minutieusement étudiées

sont l'objet d'une surveillance constante. L'encéphale et la moelle du lapin ou du chien ayant succombé à l'inoculation intra-cérébrale ou sous dure-mèrienne, sont fixés et par agitation prolongée dans un vase clos contenant des perles, puis émulsionnés très finement dans l'eau physiologique phéniquée au 1/100e, le taux d'émulsion de la substance nerveuse étant exactement de 5/100. L'émulsion est filtrée sur 2 épaisseurs de gaze et les ballons qui la contiennent, maintenus 24 heures à + 37°. Au sortir de l'étuve, l'émulsion, est, d'une part, largement ensemencée en bouillon et sur gélose, d'autre part, inoculée à la dose de 0,5 cc. sous la dure-mère de 2 lapins. La preuve étant faite qu'elle est stérile et inoffensive, même pour la dure-mère, on la conserve à la glacière en ampoules de 5 cc. Ces ampoules peuvent être injectées sur place ou expédiées au dehors sur simple télégramme. Le traitement comprend 14 injections. Le délai de conservation est de 3 mois au minimum.

Dans les pays où le virus rabique n'a qu'une agressivité faible ou moyenne (Afrique, Europe Occidentale), on emploiera un vaccin rigoureusement tué comme ci-dessus ; mais en Europe Orientale, et en Asie, aux Indes en particulier, où les virus ont une force supérieure à la normale, on n'hésitera pas à supprimer le séjour à l'étuve à + 38°, ou à diminuer très légèrement le taux de l'acide phénique (0,75 au lieu de 1 ‰) quitte à employer ainsi un virus entraînant la mort du lapin, mais sans danger pour l'homme. Les vaccins phéniqués jouissent d'un pouvoir immunisant sensiblement égal à celui des vaccins desséchés, dilués, etc. ; mais rien dans les expériences ni dans les statistiques ne permet d'affirmer leur supériorité. Leurs avantages sont d'ordre purement pratique (25), (27).

Le vaccin antirabique a été également appliqué au traitement de la poliomyélite, car le sérum de convalescent n'est pas d'une efficacité absolue quand les paralysies sont constituées. Le virus rabique a en effet une localisation médullaire analogue à celle du virus de la paralysie infantile, il atténue le processus inflammatoire et surtout réactive les éléments nerveux lésés par le virus de la poliomyélite (24). Il est aussi efficace contre certaines algies, sciatiques, algies tabétiques, manifestations douloureuses des artérites, migraines. On fait 20 à 25 injections journalières selon la progression employée à l'Institut Pasteur pour la prophylaxie de la rage (23), (26).

VACCIN ANTIRHUMATISMAL

L'autovaccinothérapie du rhumatisme articulaire consiste à retirer par ponction de l'articulation une petite quantité de liquide (1 cc. le premier jour) que l'on injecte sous la peau. Elle donne comme adjuvant du salicylate d'excellents résultats. On peut répéter l'injection tous les 2 jours (28).

VACCINS ANTISTAPHYLOCOCCIQUES

Les vaccins antistaphylococciques sont curatifs et appartiennent soit à la catégorie des vaccins microbiens, soit à celle des anatoxines.

1° L'Institut Pasteur délivre 2 vaccins antistaphylococciques, l'un contre l'ostéomyélite, l'autre contre la furonculose. Ils sont à base de plusieurs souches de staphylocoques blancs et dorés cultivés sur gélose, émulsionnés dans l'eau physiologique à 8 °/₀₀ et tués à la température minima nécessaire, comprise entre + 56° et + 60° (69).

Le vaccin antifuronculeux est titré à 6×10^9 germes par cc. : $4,5 \times 10^9$ staphylocoques dorés et $1,5 \times 10^9$ staphylocoques blancs. Il est délivré par 6 ampoules de 2 cc. L'expérience montre que l'injection de 72×10^9 germes constitue une dose toujours suffisante pour assurer l'immunité. On la répartit en 12 injections sous-cutanées sur 24 jours selon le tableau suivant :

1re injection	1/4 cc.	$1,5 \times 10^9$
2e injection	1/2 cc.	3×10^9
3e injection	3/4 cc.	$4,5 + 10^9$
4e, 5e, 6e, 7e et 8e injections	1 cc.	6×10^9
9e et 10e injections	1 cc. 1/4	$7,5 \times 10^9$
11e et 12e injections	1 cc. 1/2	9×10^9

Les réactions locales ou générales sont presque insignifiantes ou nulles. Si le malade présente par hasard une sensibilité particulière, il faut diminuer ou espacer les doses, voire même supprimer le traitement (70).

Selon Camescasse, le vaccin antistaphylococcique est actif contre le zona : il guérit brutalement la dermite, mais ne calme les douleurs que s'il est employé les premiers jours de la maladie. On

fait une première injection de 0,5 cc. en peau saine, au voisinage immédiat des placards ; 48 heures après, une deuxième injection de 1 cc. et, s'il y a lieu, une troisième injection de 1,5 cc. (29). Les doses que PACREAU a préconisées sont plus faibles ; la première injection est de 0,5 cc., ; on peut ensuite, selon les cas, renouveler cette dose ou bien passer à 0,66 cc., puis 1 cc. Généralement, 3 injections suffisent pour une guérison définitive (30).

Le vaccin contre l'ostéomyélite est titré à 3×10^9 germes ; 2×10^9 staphylocoques dorés et 1×10^9 staphylocoques blancs provenant d'ostéomyélites graves. Le traitement doit être surveillé de très près et varie avec chaque cas particulier. La dose initiale, selon GRÉGOIRE, est de 1 /10 à 2 /10 de cc. chez les enfants, 1 /4 de cc. chez les adultes. Les doses maxima sont respectivement de 1 cc. et de 1,5 à 2 cc. Ce traitement n'est efficace que s'il est instauré au début de la maladie ; il doit être maintenu jusqu'à disparition complète de tout phénomène inflammatoire et poursuivi encore pendant 2 mois à raison d'une injection tous les 8 jours (70).

2° Le Néo-Dmesta est un vaccin spécialisé, présenté en ampoules de 1 cc. contenant 250×10^6 staphylocoques provenant d'affections variées et atténuées par le fluorure de sodium qui altère aussi peu que possible les microbes tout en les tuant. La dose moyenne est de 1 ampoule par voie sous-cutanée, tous les jours ou tous les 2 jours, en alternant régulièrement les 2 sortes d'ampoules (67).

3° Le Lysat-vaccin polyvalent de DUCHON est un vaccin curatif et préventif contenant non seulement les exotoxines, mais encore les microbes lysés par le B. pyocyanique. Le liquide de culture est filtré à la bougie et délivré parfaitement limpide. Contre la pneumonie, la diphtérie et diverses affections aiguës des voies respiratoires, on emploie le lysat-vaccin dont la composition est la suivante :

Staphylocoques	10×10^9
Bacilles de PFEIFFER	$7,5 \times 10^9$
Streptocoques	$3,5 \times 10^9$
Micrococcus catarrhalis	3×10^9
Colibacilles	$2,5 \times 10^9$
Bacilles diphtériques	$2,5 \times 10^9$
Pneumocoques	$2,5 \times 10^9$

On fait une injection de 1 cc. par jour chez l'adulte et chez l'enfant, à renouveler pendant 6 à 10 jours ou plus (67).

4° Contre l'acné, il existe des stock-vaccins polyvalents selon les formules suivantes :

a) 100×10^6 germes par cc.

b) 1×10^9 germes par cc.

c) mélange de staphylocoques, B. de UNNA et tétragènes.

En général, on doit injecter le vaccin dans le derme et continuer le traitement avec persévérance (67).

5° La vaccineurine est un mélange à parties égales de cultures filtrées et d'autolysat de staphylocoques dorés et de B. prodigiosus, dilué dans l'eau physiologique et additionné de 0 gr. 25 de phénol (68).

6° L'autovaccin antistaphylococcique se préparera selon la technique que nous avons indiquée au paragraphe « Auto-vaccins ».

7° Le tétravaccin antipyogène est un mélange de pyogènes aérobies cultivés sur gélose émulsionnés dans l'eau physiologique et tués par la chaleur.

Ils sont associés selon la formule :

Staphylocoques	3×10^9	pour 1 cc.
Streptocoques......................	3×10^9	
B. pyocyaniques	$1,5 \times 10^9$	
B. cutis commune	$0,5 \times 10^9$	

On pratique une injection sous-cutanée de 1 cc., puis 2 de 2 cc. ; si le malade est par trop sensible, on pratiquera 6 injections en commençant par 1/4 de cc., puis 1/2, 3/4 de cc., etc... Ce vaccin agirait surtout comme médicament de choc.

C'est le type des vaccins polyvalents dont il existe de très nombreuses variétés obtenues en modifiant quantitativement la formule ou en associant d'autres germes aux espèces ci-dessus (9) : Propidon, vaccin iodé de RANQUE et SENEZ, lipo-vaccin de LEMOIGNIC, vaccin de BRUSCHETTINI (67).

7° La toxine staphylococcique découverte par BURNET de Melbourne a permis de préparer une anatoxine : des staphylocoques sélectionnés sont cultivés sur un milieu spécial. La formule publiée en 1936 par RAMON et ses élèves est celle d'un bouillon de rate de veau contenant 12 gr. de tartrate de sodium par litre comme tampon, réparti par 500 cc. en matras de FERNBACH de 1 litre et stérilisé à + 110° pendant 40 minutes (34). La formule de 1938 est un hydrolysat acide gélatine complété par adjonction

des amino-acides qui lui manquent : tyrosine, cystine et tryptophane (38). Le bouillon est ensuite filtré pour le priver de tout germe, puis soumis à l'action simultanée de 3,5 cc. de formol du commerce par litre et de la chaleur à + 39°, + 40° pendant 12 jours (31).

L'anatoxine ne doit renfermer aucune trace décelable du poison microbien dont elle dérive. Pour cela, on contrôle l'absence de pouvoir hémolytique *in vitro* et l'innocuité *in vivo* : diluée au 1 /3 et au 1 /10e elle ne doit pas hémolyser les hématies de mouton ou de lapin ; des injections intradermiques de 1 /3 et de 1 cc. d'anatoxine pure chez le lapin ne doivent provoquer ni œdème, ni nécrose au point d'impact (les animaux utilisés ne doivent pas présenter déjà un certain degré de résistance au staphylocoque ; on s'en assure en vérifiant que leur sérum ne flocule pas avec l'anatoxine) ; l'injection intraveineuse de 2 cc. d'anatoxine ne doit pas tuer le lapin. Un autre contrôle primordial est celui de la valeur antigène par le procédé de la floculation initiale (voir Sérums, page : 524) et du pouvoir de combinaison avec la toxine (31), (69).

Pour purifier le produit, on le précipite par l'acide trichloracétique à pH = 3,5 dans la glace. On centrifuge, et on redissout le culot dans une solution de carbonate ou de phosphate de sodium. De cette manière, 99 % des impuretés sont éliminées, 75 % de l'anatoxine subsistant dans le produit (40). Les échantillons d'anatoxine contrôlés et dosés sont mélangés de façon à posséder un titre moyen compris entre 10 et 15 unités antigènes (32).

Cette anatoxine est indiquée comme traitement des staphylococcies aiguës ou chroniques et particulièrement des infections cutanées ; elle donne des résultats encourageants dans l'ostéomyélite. La posologie courante est de 1 /4 de cc. pour la 1re injection, 1 /2 pour la 2e, 1 pour la 3e et 2 pour la 4e, avec une semaine d'intervalle entre chacune. Chez les enfants de moins de 5 ans, on réduira ces doses de moitié. Trois injections sont suffisantes au cours des furonculoses banales, 4 à 5 sont nécessaires dans les furonculoses invétérées et les staphylococcies tenaces. Elles se font dans le tissu cellulaire de la fosse sus-épineuse ou au-dessous de l'aisselle sur les dernières côtes (33). Il faut faire avant le traitement une recherche d'albumine dans les urines ; chez les sujets sensibles, eczémateux, ou atteints d'anthrax en évolution, commencer par 1 /20e de cc., répéter cette dose 2 ou 3 fois à 2 jours d'in-

tervalle et ne poursuivre les doses usuelles qu'en l'absence de toute réaction locale ou générale.

Les insuffisances rénale, cardiaque ou hépatique graves, la tuberculose aiguë ou congestive sont autant de contre-indications (33).

L'injection d'anatoxine staphylococcique est suivie le plus souvent d'une rougeur autour du point d'injection, disparaissant rapidement et pouvant s'accompagner d'une réaction générale modérée. Exceptionnellement, chez les sujets hypersensibles, les phénomènes locaux et généraux se manifestent de façon plus intense. Si les phénomènes sont très accentués, ils commandent l'arrêt du traitement (70).

L'anatoxine purifiée confère une immunité comparable à celle de l'anatoxine brute ; elle est indolore et les réactions locales ou générales consécutives à son emploi sont minimes ou nulles (35), (36), (37). Elle s'emploie chez l'adulte aux mêmes doses que l'anatoxine ordinaire et chez l'enfant au-dessous de 8 ans, aux doses suivantes : d'abord 0,05, puis 0,1, 0,25, et 0,5 cc. ; on fera 5 injections séparées par 4 jours d'intervalle. Chez l'enfant de 8 à 15 ans, on réduira de moitié la posologie de l'adulte. L'anatoxine purifiée est indiquée : 1° chez les enfants, 2° chez les sujets atteints de tares organiques évidentes ou de maladies allergisantes (asthme, urticaire, goutte), 3° chez ceux qui auraient réagi violemment lors d'une d'une vaccination de nature différente, 4° chez les sujets atteints depuis longtemps d'une affection staphylococcique qui les a mis en état d'allergie spécifique (39).

VACCINS ANTISTREPTOCOCCIQUES

1° Le vaccin microbien antistreptococcique est obtenu par culture sur bouillon sérum formolé ; on centrifuge et après émulsion dans le sérum physiologique à 8 °/₀₀ ont ue les germes par la chaleur à + 62° pendant 1 heure. Il est peu employé (69).

2° L'autovaccin de Dimitracoff a permis à son auteur de signaler 3 cas d'endocardite lente guéris depuis plusieurs années, alors que cette maladie semblait jusque-là au-dessus des ressources de la thérapeutique. Ce vaccin contient à la fois les corps microbiens et la toxine diffusée dans le bouillon. On injecte tous les 2 ou 3 jours des doses croissantes de 0,25 à 4 cc. De violentes réactions obligent parfois à espacer les injections de 4 à 5 jours.

Si la réaction est violente on n'augmente pas la dose, mais on n'en poursuit pas moins le traitement qui, pour réussir, doit être institué précocement (43).

3° PASTEUR VALLERY-RADOT, BLAMOUTIER et NITTI ont employé contre l'asthme, à forme exclusivement bronchique un stock-vaccin de la composition ci-dessous :

Streptocoques hémolytiques	1.250×10^{9}
Streptocoques *viridans*	1.250×10^{9}
Pseudomeningocoques	0.750×10^{9}
Pneumocoques H3	0.750×10^{9}
Total :	4×10^{3}

Ces germes ont été isolés de crachats d'asthmatiques.

On pratique des injections intradermiques dans la région dorsale, chaque fois en des points différents ; on débute par 0,1 cc. et on augmente de 0,1 cc. à chaque fois jusqu'à 1,5 et 2 cc. suivant les réactions locales ; à partir de 1 cc., la dose doit être répartie en 2 points différents ; on pratique d'abord trois injections par semaine, puis deux, puis une seulement. On observe une légère réaction thermique ; les réactions fortes à + 39° sont rares (44).

4° Le vaccin de GRABITCHEWSKY est employé comme prophylaxie et traitement de la scarlatine ; des cultures de plusieurs races de streptocoques provenant de divers cas de scarlatine sont atténuées par la chaleur à + 60° et additionnées de phénol. On centrifuge et on émulsionne le culot dans de l'eau physiologique. Ce vaccin semble avoir été employé avec succès chez l'enfant et chez l'adulte en Pologne et en U. R. S. S. (41).

5° RAMON et DEBRÉ s'inspirant de la préparation de l'anatoxine diphtérique et partant du filtrat de culture du streptocoque scarlatineux, ont préparé un produit qui possède les propriétés fondamentales d'une anatoxine, d'une innocuité absolue chez l'homme et dont le pouvoir antigène spécifique est mesurable *in vitro* par floculation.

Avec M^lle^ PETOT, ils ont procédé à des essais d'immunisation active chez l'homme : la première injection est de 0, 5 cc.,la seconde de 1 cc., la troisième de 1,5 à 2 cc. On observe un repos de 3 semaines entre les 2 premières piqûres et de 15 jours avant la troisième. Avec une anatoxine scarlatineuse de pouvoir antigène suffisamment élevé, les auteurs ont pu réaliser chez l'homme une immunité telle que la réaction de DICK soit totalement négative

chez 88 % des sujets, et totalement ou partiellement négative chez 93 % d'entre eux (42).

VACCIN ANTITÉTANIQUE

Le vaccin antitétanique est une anatoxine que l'on prépare en cultivant des b. tétaniques sélectionnés sur bouillon peptoné additionné de glucose et d'un extrait de globules rouges qui contient les vitamines indispensables. Le pH est ajusté entre 5,5 et 6,7 au moyen de phosphate monopotassique. Après 11 jours de culture, on filtre sur bougie (49). Le filtrat est soumis à l'action combinée de la chaleur à + 39°, + 40° et du formol (2 à 3 cc. par litre) pendant 1 mois. On contrôle l'innocuité du produit comme celle de l'anatoxine diphtérique ; la mesure de sa valeur immunisante est encore à l'étude (69).

On peut purifier l'anatoxine tétanique en la précipitant par l'acide trichloracétique ; ainsi traitée, elle n'est pas altérée et ses propriétés floculante et immunisante sont très voisines de celles de l'anatoxine (47).

La posologie en injections sous-cutanées dans la région sus-épineuse est la suivante : une injection de 1 cc. et deux de 2 cc. avec un intervalle de 3 semaines entre chacune. Ces délais ne doivent pas être réduits sous peine de voir diminuer l'efficacité de la vaccination. Les réactions locales et générales sont nulles. Les infections de la peau et les maladies fébriles sont autant de contre-indications (70).

Pratiquement, la totalité des sujets vaccinés est immunisée. L'immunité commence à s'établir quelques jours après la 2e injection et dure plusieurs années. ZOELLER et RAMON ont vu que 4 ou 5 ans après, elle est encore très marquée. Néanmoins, ils recommandent de pratiquer 1 ou 2 ans après la vaccination une injection de rappel de 2 cc. L'association de la sérothérapie à la vaccinothérapie permet d'obtenir une immunité continue (45). La vaccination anatoxique préventive est spécialement recommandée chez les sujets particulièrement soumis au risque d'une infection tétanique (enfants, militaires, agriculteurs). L'anatoxine est délivrée en boîtes de 3 ampoules de 2 cc. pour vaccinations individuelles et en ampoules de 10 cc. pour vaccinations collectives (70).

Les vaccins associés contenant de l'anatoxine tétanique sont les suivants :

1° vaccin associé antitétanique-antidiphtérique ;

2° vaccin associé antitétanique-antityphoparatyphique A et B ;

3° vaccin associé antitétanique-antidiphtérique-antityphoparatyphique A et B.

Les détails les concernant sont indiqués à l'article « Vaccins Associés » (voir page 645).

La question de l'anatoxine tétanique a été ainsi résumée par Ramon, que nous ne saurions mieux faire que de citer textuellement : « Etant donné, d'une part, les conditions particulières d'apparition du tétanos chez l'homme et la mortalité qu'il entraîne malgré la sérothérapie et, d'autre part, l'innocuité de l'anatoxine tétanique et l'immunité solide et durable qu'elle confère... l'application de cette méthode de vaccination se trouve entièrement justifiée et doit être systématiquement poursuivie chez les individus et dans les collectivités exposées à l'infection tétanique » (48).

VACCINS ANTITUBERCULEUX

et Produits divers d'origine tuberculeuse (Allergine, Antigène méthylique, Tuberculine).

1° Le plus connu et le plus répandu parmi les vaccins antituberculeux est le « B. C. G. » bacille de Calmette et Guérin. Nous ne nous étendrons ni sur les discussions qui ont eu lieu à propos de son innocuité et de son efficacité, ni sur les statistiques qui ont été publiées, mais nous nous bornerons à indiquer sommairement sa préparation et son mode d'emploi en injections. (Il est également administré *per os* ou par voie percutanée au moyen de scarifications multiples selon la méthode de Rosenthal, (60).

A la suite de longues expériences sur les bovins ainsi que sur les animaux de laboratoire, Calmette et Guérin ont établi qu'une culture virulente de bacilles bovins, atténués par 230 réensemencements successifs est devenue inoffensive. La culture a été entretenue pendant 13 ans sur pomme de terre biliée et glycérinée. Si on la reporte alors en milieu non bilié, elle ne devient pas virulente, bien qu'elle sécrète de la tuberculine ; administrée à un sujet indemne de tuberculose, elle lui confère l'immunité contre une contagion ultérieure, mais elle est sans action immunisante chez un sujet déjà infecté (67).

On ne peut vacciner par injections sous-cutanées de B. C. G. (selon la technique de Weill-Hallé) que les sujets certainement

indemnes d'une contamination antérieure. Entrent dans cette catégorie les nouveau-nés ayant repris leur poids de naissance et séparés immédiatement de tout sujet contagieux ou même suspect ; les enfants et les adolescents chez qui deux cuti-réactions à la tuberculine pratiquées à 7 jours d'intervalle sont négatives. La vaccination sous-cutanée doit être contrôlée 2 fois par an par une épreuve à la tuberculine. La disparition de la sensibilité à la tuberculine rend nécessaire la revaccination par la même voie.

La vaccination est effectuée par injection sous-cutanée du contenu de 2 ampoules de «B. C. G.-SC » de l'Institut Pasteur. Chaque ampoule contient environ 2 cc. de liquide tenant en suspension 1/100e de mmgr. de B. C. G. par cc., soit au total pour la vaccination 1/25 de mmgr. de B. C. G. Il faut agiter fortement l'ampoule avant l'emploi. L'injection est faite en 2 fois, dans le tissu cellulaire au-devant du bord axillaire du grand dorsal, à droite et à gauche. Chez les adultes anergiques, la dose est de 1/20e de mmgr.

L'inconvénient de ce procédé est de provoquer parfois un petit abcès froid, tout à fait bénin cependant. Quatre à six semaines après la vaccination, on pratique une nouvelle cuti-réaction qui est le plus souvent positive. L'immunité n'est complète qu'au bout de 2 mois et pendant ce temps tout sujet vacciné doit être préservé très soigneusement des contagions tuberculeuses (58), (70).

Le B. C. G.-SC ne se conserve que 10 jours. L'Institut Pasteur, 25, rue du Dr Roux, Paris, ne le délivre qu'aux médecins qui seuls peuvent l'utiliser. Il est d'ailleurs fourni gratuitement.

2° Rappin a pu préparer un vaccin antituberculeux inoffensif capable de conférer au cobaye une résistance certaine à l'infection tuberculeuse expérimentale.

Les bacilles de Koch provenant de cultures en bouillon, d'âges différents, sont soumis à la dessiccation pendant 24 heures, puis traités par des solutions à 2 ou 3 % de fluorure de sodium pendant plusieurs jours ; ils perdent ainsi tout pouvoir infectieux sans perdre leurs propriétés toxiques. On les lave ensuite à l'eau physiologique, puis on les soumet quelque temps à l'action du sérum antituberculeux de Rappin. C'est cette émulsion dans le sérum antituberculeux qui constitue le vaccin. Injecté à la dose de 0,3 à 0,4 dans le tissu cellulaire sous-cutané du cobaye, il provoque une réaction ganglionnaire peu importante et une élévation thermique.

Ce vaccin est aussi bien préventif que curatif et pourrait, selon l'auteur, être essayé dans la pratique courante, en particulier chez l'enfant (67).

3° JOUSSET a préconisé, en 1929, l'emploi d'un extrait aqueux de bacilles de KOCH qu'il considère comme l'une de leurs endoxines. Les bacilles tués à basse température sont longuement lavés pour éliminer toute trace de tuberculine, puis broyés, soumis à la congélation fractionnée, et exprimés à la presse hydraulique ; on obtient par macération dans l'eau neutre une émulsion que l'on clarifie par centrifugation et par collage. Le liquide desséché constitue l'allergine, produit peu défini, thermolabile, non dialysable, doué d'un pouvoir antigénique net.

Cette préparation a donné des résultats intéressants dans les traitements des tuberculoses pulmonaires, osseuses, ganglionnaires et cutanées (59).

4° L'antigène méthylique tuberculeux de BOQUET et NÈGRE est un extrait injectable de bacilles de KOCH préparé à l'Institut Pasteur. Des cultures de bacilles de KOCH sont chauffées à + 120°, puis lavées à l'eau distillée. On en élimine les cires et les graisses en les maintenant 5 jours dans l'acétone, puis on les place pendant 12 jours dans l'alcool méthylique pur. On filtre, on chasse l'alcool par dilution avec de l'eau distillée et concentration dans le vide.

Le produit est présenté en ampoules de 1 cc. sous deux formes : antigène méthylique dilué au 1/10e et antigène méthylique pur.

Les injections intramusculaires trouvent leurs indications dans les tuberculoses externes à raison de 1 ou 2 par semaine. On commence par 1/8 de cc., puis on augmente progressivement la dose à 1/4, 1/2, 3/4 et 1 cc. d'antigène dilué, puis 1/8, 1/4, 1/2, 3/4 et 1 cc. d'antigène pur.

Les injections sous-cutanées pratiquées dans la région dorsale, sont réservées aux tuberculoses pulmonaires ; la dose de début est de 0,5 cc. d'antigène dilué, qu'on renouvelle tous les 2 jours ou même tous les jours ; on poursuit le traitement en répétant plusieurs fois chaque dose et en augmentant progressivement par vingtièmes de cc. jusqu'à 1 cc. par injection. La cure dure plusieurs mois (67), (68).

5° La tuberculine est obtenue après macération à + 58° pendant 15 jours, dans l'eau stérile, de bacilles de KOCH débarrassés auparavant des substances solubles dans l'eau glycérinée ; on

filtre et on précipite par 9 volumes d'alcool-éther à parties égales ; on reprend par l'eau physiologique et l'on élimine les substances pyrétogènes solubles dans l'alcool. Le précipité desséché est titré par inoculation intracérébrale au cobaye ; on le dissout enfin dans le sérum physiologique. La tuberculine C. L. renferme tous les produits de sécrétion des bacilles de KOCH dans les cultures et les substances protoplasmiques des mêmes bacilles.

Son mécanisme thérapeutique a été mis en lumière par A. ROBIN, CALMETTE et RICHOU, SAVARRE et SEZARY. Ces auteurs ont vu de nombreux malades, au début de leur affection, obtenir la guérison avec *restitutio ad integrum*, et d'autres, plus avancés, s'améliorer considérablement.

On pratique des injections intradermiques à la dose de 1/1000 de mmgr. (méthode des doses faibles de CALMETTE) ou de 1/100000 de mmgr. (méthode des doses très faibles de SÉZARY), espacées de 12 jours et par séries de 12. Une infection intercurrente, même légère, ainsi que la période menstruelle, feront interrompre la cure. La composition des boîtes permet la progression des doses si le médecin le juge opportun (67).

La tuberculine sert en outre à l'intradermoréaction de MANTOUX, qui consiste en une injection intradermique d'une quantité dosée de tuberculine. On emploie une solution à 1/5000 obtenue extemporanément en diluant 1 cc. de solution de tuberculine à 1 % de l'Institut Pasteur dans 49 cc. d'eau physiologique. On en injecte 1 goutte, soit 1/100 de mmgr.

La réaction positive est maxima au bout de 48 heures ; elle a un aspect en cocarde avec infiltration nodulaire centrale plus ou moins rouge, entourée d'un halo rosé d'érythème ; la peau est chaude et un peu sensible. Dans quelques cas rares, la réaction n'apparaît que du 3e au 5e jour ; en général, elle commence à régresser après 48 heures. Quand la réaction est négative, la lésion traumatique minime provoquée par l'aiguille n'est plus visible au bout de 48 heures (70).

La tuberculine sert enfin à pratiquer la cuti-réaction, comme une simple vaccination jennérienne.

VACCINS ANTITYPHO-PARATYPHIQUES A et B

Ils appartiennent, soit à la catégorie des vaccins microbiens (et ce sont les plus employés), soit à la catégorie des anatoxines.

1° *Vaccins microbiens.*

On a autrefois essayé des bacilles vivants, des produits d'extraction de bacilles morts, des cultures stérilisées. Actuellement, on emploie des corps bacillaires tués et le vaccin de l'Institut Pasteur dit « T. A. B. » est le modèle des vaccins du type Vright. Les germes isolés par hémo ou coproculture sont cultivés sur bouillon gélosé, consistant, en boîtes de Roux pendant 12 à 24 heures. On les émulsionne dans l'eau physiologique à 8 °/oo sans râcler les colonies. On les stérilise par la chaleur à + 56° pour le B. typhique et le para A, à + 57° pour le para B, sans dépasser ces températures. Il vaut mieux prolonger le temps de chauffe, que dépasser les limites ci-dessus.

On emploie en général un vaccin triple contenant :

B. typhiques	$1,8 \times 10^9$
B. paratyphiques A	$1,2 \times 10^9$
B. paratyphiques B	$1,2 \times 10^9$

Ils sont cultivés et émulsionnés séparément ; les émulsions sont amenées à un titre 3 fois supérieur au titre final, puis mélangées à parties égales (69).

Les doses utilisées à titre préventif sont pour les adultes :

en 3 fois		ou en 4 fois	
1re injection	0,75 cc.	1re injection	0,25 cc.
2e injection	1 cc.	2e injection	0,50 cc.
3e injection	1, 5 cc.	3e injection	0,75 cc.
		4e injection	1 cc.

Pour les enfants au-dessous de 15 ans :

1re injection	0,25 cc.
2e injection	0, 5 cc.
3e injection	1 cc.

Les injections vaccinales sont faites avec un intervalle de 7 à 10 jours. Pour la revaccination, la dose est unique :

Adultes : 1,5 cc. Enfants : 1 cc. (69), (70).

L'immunité conférée par le T. A. B. est telle qu'il suffirait d'une réinjection à faible dose tous les 15 ou 20 ans pour assurer la per-

manence d'une immunité suffisante. La première vaccination devrait se faire dès l'enfance (51).

Le T. A. B. peut être également employé à titre curatif en injections intradermiques de 0,5 cc. de dilution très étendue (0 gr. 05 de vaccin dans 2 cc. d'eau distillée). Si aucune réaction ne se produit dans les 24 heures, on inoculera une suspension plus concentrée à la dose de 1,5 à 3 cc. Chaque injection ne doit être faite qu'après la fin de la réaction provoquée par la précédente (52).

Livierato et Vagliano ont montré que l'administration quotidienne par voie veineuse de bouillon-vaccin de Besredka, à des doses comprises entre 0,25 et 1 cc. donne des résultats exempts de dangers et très supérieurs à ceux des vaccins microbiens chauffés employés curativement (50).

2° *Anatoxine.*

On soumet des émulsions concentrées de b. typhiques de pouvoir antigénique sélectionné, tués par chauffage à + 58°, à un procédé d'extraction par congélations répétées à basse température. On obtient, après élimination des résidus microbiens, un antigène qui contient sous une forme soluble et toxique les principes immunisants spécifiques de l'endotoxine des bacilles typhiques originels. Ce produit, traité au contact de produits d'hydrolyse pepsique (tel que bouillon Martin ajouté à parties égales) par le formol à 5 ‰ donne au bout de 6 semaines de séjour à l'étuve à + 38° une endoanatoxine complètement atoxique.

Le vaccin utilisé chez l'homme contient par cc. les principes de 2 à 3 mmgr. de bacilles typhiques secs, soit 6 à 8×10^9 germes. On pratique 2 injections de 0,5 et 1 cc. à 8 jours d'intervalle. On peut aussi employer une endoanatoxine concentrée en injection unique ; de même une endoanatoxine précipitée par l'alun, insoluble (53).

VACCIN CONTRE LE TYPHUS EXANTHÉMATIQUE

Nicolle et ses collaborateurs ont montré la possibilité de vacciner l'homme avec un virus vivant au moyen d'injections de doses sous-infectantes de virus de typhus historique (cerveau de cobaye infecté) augmentées graduellement jusqu'aux doses infectantes, mais cette méthode doit être progressive et ces inoculations s'étendre sur quatre mois environ.

Blanc a réalisé un vaccin qui n'est dangereux ni pour l'individu,

ni pour la collectivité ; le vacciné ne court pas le risque de contracter le typhus exanthématique et son sang ne peut pas infecter les poux. Il a utilisé le virus murin peu pathogène pour l'homme et ne paraissant pas susceptible de créer des porteurs de germes. Ce virus est atténué par culture sur bile et sa virulence conservée par passages successifs sur le cobaye. L'expérimentation humaine établit d'une façon indubitable l'efficacité de ce vaccin (54).

Plus récemment, Blanc et Balthazard ont montré que les Rickettsias émises dans les déjections de puces (x. chéopis) infectées de typhus murin se conservent parfaitement à sec pendant 100 jours dans le vide, en ampoules scellées, sans affaiblissement de la virulence. Un vaccin préparé avec le virus sec a la même efficacité et la même innocuité qu'un vaccin bilié préparé avec le virus frais. La très longue conservation de ce virus à la température ordinaire permet son envoi à de longues distances (56).

On a constaté sur quelques cas que l'immunité pouvait persister 8 mois après la vaccination. Cette vaccination est la réalisation d'une affection inapparente. Aussi n'en doit-on pas attendre une immunité définitive. Elle doit être réservée à ceux qui approchent les malades, et peut être renouvelée chaque année. Elle doit être appliquée aussi aux agglomérations d'individus où s'entretient le foyer de typhus et, en cas d'épidémie, à toute la collectivité menacée (54).

Laigret et ses collaborateurs ont employé une méthode différente ; leur vaccin est constitué par le virus murin vivant inoculé dans le cerveau du cobaye ou du rat. La vaccination chez l'homme comporte une première injection de 1/200^{e} de cerveau virulent de cobaye, desséché, enrobé de jaune d'œuf et d'huile d'olive, puis 20 jours après une seconde injection de 1/200^{e} de cerveau de rat (55). Actuellement, le vaccin est préparé avec des cerveaux de souris, animaux beaucoup plus sensibles que les rats ou les cobayes qui ne se prêtaient à aucun étalonnage précis. Le vaccin-souris se conserve pendant des mois au frigorifique et au moins une semaine à la température ordinaire. Les indigènes des campagnes sont vaccinés en une seule fois, les habitants des villes et les Européens en 3 fois, à doses progressives. La tolérance est parfaite, il n'y a ni réaction locale, ni fièvre et l'efficacité de cette méthode est remarquable (57).

VACCINS ASSOCIÉS

Ramon a montré (61), (62) tous les bienfaits à retirer de la méthode des vaccinations associées qui consiste à injecter en même temps plusieurs vaccins actifs contre des maladies différentes. On réalise ainsi plusieurs immunités en une seule série d'opérations et chacune des immunités ainsi développées est supérieure à celle que confère la vaccination simple. Les vaccins associés s'emploient, comme les vaccins simples ; en injections sous-cutanées dans la région sus-épineuse.

1° *Vaccin associé antidiphtérique-antitétanique.*

C'est un mélange, en proportions convenables, d'anatoxines diphtérique et tétanique. Il est délivré pour vaccinations collectives en ampoules de 10 cc. ; pour vaccinations individuelles, en boîtes de 3 ampoules de 2 cc. On pratique 3 injections de 2 cc. séparées par des intervalles de 3 semaines. Une précaution excellente est celle de l'injection dite de rappel, à pratiquer par exemple 1 an après la vaccination ou bien à l'occasion d'une blessure. En cas de maladie fébrile, d'infection de la peau, d'affection rénale, on doit surseoir à la vaccination. Ce vaccin associé ne provoque pas plus de réactions que l'anatoxine diphtérique. La double immunité ne commence guère à se développer que 18 jours après la 1re injection et atteint son maximum 15 jours après la 3e.

2° *Vaccin associé antidiphtérique-antityphoparatyphique.*

C'est un mélange d'anatoxine diphtérique et des 3 bacilles : Eberth, paratyphiques A et B tués par chauffage, chaque cc. renferme 0,94 d'anatoxine diphtérique, $1{,}05 \times 10^9$ bacilles d'Eberth, 700×10^6 paratyphiques A et 700×10^6 paratyphiques B. Il est présenté en boîtes de 3 ampoules de 2 cc. Les doses chez les adultes sont de 1 cc. pour la première injection et de 2 cc. pour les 2 autres ; chez les enfants de 0,5 cc. pour la première, 1 cc. pour la seconde, 1,5 cc. pour les 2 autres. On observe un repos de 15 jours à 3 semaines entre chacune. Les injections de rappel se font aux doses de 2 cc. chez l'adulte et 1,5 chez l'enfant.

3° *Vaccin associé antitétanique-antityphoparatyphique.*

C'est un mélange d'anatoxine tétanique à 30 U. A. par cc. et d'une suspension dans l'eau physiologique de bacilles d'Eberth

et de paratyphiques A et B tués par chauffage à + 56° pendant 1 heure. Chaque cc. renferme 0,94 d'anatoxine tétanique 1,050 $\times 10^9$ bacilles d'EBERTH, 700 $\times 10^6$ paratyphiques A et 700 $\times 10^6$ paratyphiques B. Il est présenté en ampoules de 10 et 20 cc. pour vaccinations collectives et en boîtes de 3 ou 4 ampoules (1 et 2 cc.) selon l'âge du sujet à vacciner. Les doses chez les sujets de plus de 12 ans sont de 1 cc. pour la première injection et de 2 cc. pour les 2 autres ; chez les sujets de moins de 12 ans, 0,5 cc. pour la première, 1 cc. pour la seconde et 1,5 cc. pour les deux dernières. On observe un repos de 15 à 21 jours entre chacune suivant l'avis du médecin. L'injection de rappel est une excellente précaution à prendre 1 an après la vaccination associée ou à l'occasion d'une blessure : on injecte 1,5 cc. aux enfants, 2 cc. aux adultes.

Les réactions vaccinales sont du même ordre que celles du vaccin antityphique seul. L'immunité n'est complète que 15 jours après la troisième injection au plus tôt.

4° *Le vaccin associé antidiphtérique-antitétanique-antityphoparatyphique A et B.*

C'est un mélange en proportions convenables d'anatoxines diphtérique et tétanique et de vaccin antityphoparatyphique délivré en ampoules de 10 cc. pour vaccinations collectives et en boîtes de 3 ampoules de 2 cc. pour vaccinations individuelles. Les doses chez les sujets de moins de 12 ans et de plus de 12 ans sont les mêmes que pour le précédent, ainsi que les intervalles entre chaque injection. Ce vaccin ne provoque guère plus de réactions que le vaccin antityphoparatyphique seul. L'immunité n'est complète que 15 jours après la troisième injection au plus tôt.

Selon R. CLÉMENT, il vaut mieux, chez l'enfant, faire le mélange soi-même et proportionner la dose de T. A. B. à l'âge du sujet d'après le tableau suivant :

Nourrissons

1re injection	0,2 cc. T. A. B.	soit	800×10^6 germes
2e »	0,4 à 0,5 cc. »	»	1,6 à 2 $\times 10^9$ germes
3e »	0,8 à 1 cc. »	»	3,2 à 4 $\times 10^9$ »

et 2 cc. de mélange d'anatoxines diphtérique et tétanique chaque fois.

Enfants de 3 à 7 ans

1re injection	0,3 cc. T. A. B.	soit	1,2 $\times 10^9$ germes
2e »	0,6 cc. »	»	2,4 $\times 10^9$ »
3e »	1,2 cc. »	»	4,8 $\times 10^9$ »

et 2 cc. de mélange d'anatoxines diphtérique et tétanique chaque fois

Enfants de 7 à 12 ans

1re injection	0,4 cc.	T. A. B.	soit	$1,6 \times 10^9$ germes
2e »	0,8 cc.	»	»	$3,2 \times 10^9$ »
3e »	1,5 cc.	»	»	6×10^9 »

et 2 cc. de mélange d'anatoxines diphtérique et tétanique chaque fois

Chez l'adulte, on tâtera la susceptibilité du sujet en injectant 1 goutte de vaccin associé dans le derme et on fractionnera ensuite les doses selon la réaction obtenue en multipliant les doses si c'est nécessaire (63).

5° *Vaccination associée antipneumococcique-antityphoparatyphique.*

Elle est à employer chez les Noirs dont la susceptibilité aux injections pneumococciques est bien connue ; on met en suspension 1×10^9 pneumocoques dans 1 cc. d'endoanatoxine typhique de GRASSET (53).



VENINS

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VENIN D'ABEILLE

Le venin d'abeille est un liquide limpide légèrement acide dont les principes actifs sont des alcaloïdes d'origine végétale, sans rapports avec l'acide formique dont on avait voulu les rapprocher.

On l'administre le plus souvent en solution à 1,5 °/oo, stérilisée par filtration à la bougie, soit au moyen de scarifications cutanées, soit d'injections intradermiques ; cependant certains auteurs proscrivent absolument cette dernière voie (3), et préconisent les voies sous-cutanées ou intramusculaires, bien que le produit

soit ainsi moins efficace. La dose de début est de 0,1 cm^3 puis on l'augmente rapidement ; les injections sont faites tous les jours ou espacées de 3 à 4 jours. Ce traitement est indiqué dans les algies rebelles, les arthrites, les rhumatismes chroniques musculaires ou articulaires (2), (3), (4). Ce n'est pas une protéinothérapie car le venin d'abeille est actif même totalement privé de ses matières albuminoïdes (1).

Il ne comporte aucune contre-indication, mais provoque parfois des réactions locales (rougeur diffuse de la peau, augmentation de la température locale, quelquefois de l'œdème — ce phénomène est périodique, il s'efface, puis reparaît et ainsi de suite pendant quelques jours), parfois des réactions générales (3), et enfin des réactions focales qui sont de bon augure (1).

VENIN DE COBRA

Le Cobra (Naja Tripudians) est un colubridé protéroglyphe de l'Inde, de l'Indo-Chine, de Ceylan, de la Birmanie, des Philippines et de l'Égypte.

Le venin est élaboré par une glande de structure comparable à celle des glandes salivaires, qui occupe un grand espace musculaire en arrière des yeux. Il a un pouvoir diastasique considérable et contient :

— une neurotoxine spécifiquement sédative de la cellule nerveuse,

— une hémorragine en faible quantité ;

— des anticorps : bactériolysine, cytolysine, hémolysine ;

— des ferments : diastase, protéase, jouant un rôle dans la lyse des tumeurs, thrombose, kinase, oxydase, lipase ;

— des éléments minéraux : soufre (2,5 %) et zinc ;

— un poison de nature inconnue.

Les éléments actifs sont la neurotoxine et la phosphodiastase. Cette dernière dédouble la lécithine libre des tissus et des humeurs avec formation de lysocithine étudiée par Delezenne, Fourneau et Mlle Ledebt. Ce phosphatide atoxique a un pouvoir cytolytique intense et lyserait les cellules cancéreuses en même temps que la diastase protéolytique du venin. Ce pouvoir cytolytique peut être bloqué par le cholestérol libre (Phisalix).

La neurotoxine est sédative et agit en se fixant sur les terminaisons nerveuses voisines de la tumeur.

Le venin de Cobra arrive en général en Europe à l'état sec ; il se conserve ainsi parfaitement et l'on cite un échantillon encore actif au bout de 35 ans (6) ; par contre, ses solutions colloïdales sont très altérables. On doit les conserver en ampoules de verre jaune, entourées de papier noir ; elles gardent ainsi leur titre à la température ordinaire pendant 3 mois et pendant 6 à 7 mois au frigidaire (9). Elles auront été au préalable stérilisées par filtration à la bougie.

Les solutions de venin de cobra sont titrées d'après DUMATRAS en unités-souris (U. S.) ; l'unité est la dose mortelle pour une souris de 25 gr. Celles que l'on emploie habituellement ont un véhicule hydroglycériné et titrent environ 1/80.000 de venin, soit 10 unités par cm^3 (6). Les doses usuelles varient de 1/10 à 1 U. S. par voie intradermique (8) ou de 2,5 à 20 U. S. ou même davantage en injections sous-cutanées, pratiquées à l'aide d'une seringue ordinaire munie d'une aiguille courte dans les tissus cellulaires de la fosse sus-épineuse de la région deltoïdienne, de la région fessière supérieure, de la cuisse.

Le traitement par le venin de cobra rend des services dans toutes les algies et particulièrement celles des tumeurs bénignes ou malignes, et ces dernières en bénéficient dans leur évolution (5). Il est indiqué également dans les cas d'éclampsie (7).

Cette cure est compatible avec tout traitement tonique ou radiothérapique, mais les vaccins et les médicaments iodés gênent l'action de la toxine venimeuse (5) de même que les sels d'or et les produits radioactifs (6).



VIN DE PORTO

G. FAGOUET. — *P.M.*, 1939, N° 8, 150.

La méthode de FONSECA consiste en injections intraveineuses de vin de Porto mis en ampoules de 3 cm^3 stérilisé par tyndallisation et mélangé au moment de l'emploi avec une solution de soude également stérilisée, d'une concentration telle que le mélange soit à pH = 7,0 ; le mélange est encore additionné de 15 cm^3 de sérum physiologique. Les indications sont les anémies post-hémorragiques, les septicémies, les ostéomyélites.



VIOLET DE GENTIANE

1. G. Carrière et Martin. — *Bul. Ac. Méd.*, 1932, CVII, 799.
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Le violet de gentiane, voisin du violet de méthyle, est le dérivé pentaméthylé de la pararosaniline. Périer ayant constaté l'absence de métaux toxiques dans ce colorant et étudié le pH de ses solutions, donne la technique suivante pour préparer la solution injectable par voie veineuse :

Solution A.

Violet de gentiane R. A. L.	10 gr.
Eau bidistillée	250 cc.
NaOH N/20	100 cc.
Eau bidistillée, q. s. pour	500 cc.

Solution B.

Saccharose	95 gr.
Eau bidistillée, q. s. pour	500 cc.

Dissoudre le violet au mortier de verre dans 250 cc. d'eau bidistillée, ajuster le pH à 7,4 par addition de 100 cc. de soude N/20 et compléter à 500 cc. Préparer la solution B et la mélanger à la solution A. Filtrer, vérifier le pH et répartir en ampoules de 5 cc. Stériliser par tyndallisation à + 80° pendant une demi-heure trois jours de suite. On obtient ainsi un soluté stable de pH = 7,42 qui convient donc parfaitement aux injections (2).

Nobili en a indiqué une variante : on dissout le violet de gentiane, puis le saccharose dans l'eau, on neutralise par addition de 2 cc. de phosphate monopotassique N/15 et on stérilise une demi-heure à + 100° (4). On ne peut pas remplacer le saccharose par le chlorure de sodium car ce dernier fait floculer le colorant.

Les auteurs allemands ont proposé le violet de gentiane comme traitement des Distomatoses. L'application de cette thérapeutique a été faite au Tonkin, contre la Douve de Chine et aussi contre les filaires. La dose est de 0 gr. 0035 par kgr. de poids corporel, en njection intraveineuse (2). D'autre part, Carrière et Martin

l'utilisent, par la même voie, aux doses de 0 gr. 01 à 0 gr. 05 dans diverses septicémies (1).

Le violet de gentiane s'emploie également en injections intra-artérielles, sous forme de l'un des deux solutés suivants (5).

1° Violet de gentiane	1 gr.	
Alcool à 95°	10 cc.	
Eau bidistillée, q. s. pour...	100 cc.	(GOINARD)
2° Violet de gentiane	0 gr. 10	
Phénol	0 gr. 05	
Sulfate neutre d'atropine ...	0 gr. 0002	
Eau bidistillée, q. s. pour...	10 cc.	(LUCCARELLI)

Ces solutés seront comme les précédents stérilisés par tyndallisation.

Des septicémies aiguës peuvent être rapidement jugulées par une ou deux injections intrahumérales de 10 cc. de l'une ou l'autre des formules indiquées (3).

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Les vitamines sont, selon la définition de JAVILLIER : « Des substances organiques dont l'apport alimentaire ou la formation dans l'organisme est en quantité faible, nécessaire à la croissance, au maintien de l'équilibre physiologique, à l'aptitude à la reproduction de l'homme ou de l'animal. En leur absence, apparaissent les maladies dites par carence » (1). On trouvera dans les ouvrages cités (27), (28), (29), l'historique détaillé de la question, impossible à faire ici. Les vitamines injectables sont actuellement les facteurs A, B_1,C, D, et P.P.

VITAMINE A

Synonymes : **Facteur antixérophtalmique. — Axérophtol.**

La vitamine A est d'origine exclusivement animale ; les végétaux ayant une activité vitaminique A, la doivent au carotène ; tous deux contiennent le noyau de la β-ionone, à partir duquel KOHN et MORRIS ont synthétisé le facteur antixérophtalmique en 1937. On l'extrait des huiles de foie de poisson, en particulier le Flétan (Pleuronectes Hippoglossus). La vitamine A passe dans l'insaponifiable de l'extrait éthéro-pétrolique, d'où on la sépare des stérols ; on la purifie par adsorption chromatographique sur alumine.

C'est un liquide jaune clair, visqueux, soluble dans l'alcool méthylique, le benzène, l'éther, l'acétone, le chloroforme, les huiles ; insoluble dans l'eau.

Très sensible à l'oxygène, elle est détruite en 4 heures par le passage d'un courant d'air à + 120°, résiste 2 heures à + 100° et se décompose à + 120° (27). Ses solutions huileuses nous parais-

sent donc stérilisables pendant 20 minutes à + 110° en l'absence d'air, c'est-à-dire en ampoules aussi pleines que possibles. Elle est inactive sur la lumière polarisée et donne en solution chloroformique une bande d'absorption caractéristique à 328 mμ dans l'ultra-violet.

Au point de vue clinique, l'axérophtol est un alcool et, comme tel, donne des esters avec les acides. Il résiste aux acides et aux alcalis à froid, mais s'oxyde à l'air en perdant ses propriétés physiologiques. Il donne avec le trichlorure d'antimoine en solution dans le chloroforme pur et anhydre une coloration bleue intense, que donnent aussi les carotènes, provitamines A. Cette réaction (de Carr et Price) permet son dosage. On peut le titrer également par l'iode N/100, ou employer la méthode spectroscopique (27).

La carence en vitamine A produit chez le jeune un arrêt du développement, puis une perte de poids et la mort ; chez l'adulte, un amaigrissement suivi de mort ; au cours de la période prémortelle apparaissent des troubles appelés xérophtalmie ou kératomalacie, se terminant par la fonte purulente de l'œil (28).

La vitamine A agit :

1° sur le mécanisme de la vision ;

2° comme constituant protoplasmique (mitochondries), sur les épithéliums et sur les glandes (thyroïde) ;

3° sur le métabolisme des tissus ;

4° sur le métabolisme intermédiaire ;

5° comme facteur de l'équilibre alimentaire (29).

La dose active est comprise entre 0,3 et 0,5 par jour (27) ; l'étalon international est constitué par le β-carotène optiquement inactif, dont 0,6γ représente l'unité internationale. La solution huileuse distribuée par l'Institut de Hampstead contient 500 unités internationales par gramme, soit 300γ de carotène pur (25).

On emploie la vitamine A en solution huileuse contenant 20, 40 et même 60.000 unités par cc. contre la fièvre typhoïde, en pratiquant des injections intramusculaires de 0,5 cc. tous les jours au début des cas graves, tous les 2 jours ensuite ou dans les cas moins alarmants. La maladie est écourtée, les complications intestinales évitées, les autres atténuées (2), (3), (4).

VITAMINE B[1]

Synonymes : **Facteur antinévritique, antibéribérique. — Aneurine. — Oryzanine.**

Le facteur B primitif a été séparé à la suite notamment des travaux de Mme L. Randoin et Lecoq, de Goldberger et Lillie en plusieurs vitamines dont la vitamine B_2 d'utilisation glucidique qui n'a pas reçu jusqu'ici d'applications thérapeutiques courantes, la vitamine P.P (voir plus loin) et la vitamine B_1 (28).

Cette dernière se trouve surtout dans les téguments des céréales (le riz en particulier) et la levure de bière, d'où on l'extrait par épuisement à l'acide sulfurique dilué, on adsorbe par la terre à foulon et on fait l'élution par le sulfate de quinine. Enfin, on la purifie par précipitation et cristallisation. Les points de départ de la synthèse sont l'acétylacétate d'éthyle sodé, l'oxyde d'éthylène, la thioformamide, d'une part, et, d'autre part, l'éthoxypropionate et le formiate d'éthyle.

Sa formule est celle d'un noyau pyrimidique plus ou moins substitué lié à un noyau thiazolique portant entre autres fonctions un alcool secondaire.

La vitamine B se présente en cristaux solubles dans l'eau et dans l'alcool, fondant à + 250° ; son spectre d'absorption présente un maximum entre 245 et 247 mμ en solution alcoolique très légèrement acide. Elle est détruite par la chaleur au voisinage de + 100° d'autant plus complètement que le milieu est plus alcalin, et totalement détruite en 4 heures à + 30° ou + 40° ; sa stabilité augmente avec l'acidité du milieu, et elle résiste mieux au chauffage à sec (27). Ses solutions injectables doivent donc être préparées aseptiquement ou stérilisées par filtration à la bougie et conservées en lieu frais.

L'aneurine est précipitée par l'acide phospho-tungstique, le sublimé, etc... Elle donne des réactions de diazotation avec l'acide sulfanilique et la paraaminoacétanilide ; oxydée par le permanganate de potasse, elle forme du thiochrome, fluorescent. Toutes ces réactions peuvent servir au dosage (27).

Chez l'homme, la carence en vitamine B produit le béribéri avec ses formes paralytique ou atrophique sèche et hydropique ou atrophique œdémateuse (28). La carence expérimentale provoque chez le pigeon des phénomènes de polynévrite dont il meurt en 3 se-

maines, la myéline des nerfs étant remplacée par de la graisse ordinaire ; les animaux carencés sont, en général, moins résistants aux toxiques. L'aneurine a un effet hypoglycémiant ; elle augmente le tonus et les mouvements péristaltiques de l'intestin ; elle agit sur la lactation (les besoins des femelles allaitantes sont de 2 à 4 fois plus intenses que ceux des sujets normaux) (29).

L'étalon international est un produit d'adsorption préparé à Batavia, dont 0 gr. 010 représente l'unité internationale, soit 2 γ de chlorure de vitamine B (27).

Les formes commerciales injectables sont en général présentées en ampoules de 0 gr. 002 et de 0 gr. 010 d'aneurine cristallisée. On les emploie par séries d'injections sous-cutanées, intraveineuses ou intramusculaires dans les maladies par carence (9), (26) ; pour traiter les algies (lombo-sciatiques, névralgies, coxarthries, etc...) (8), les douleurs tabétiques (15), les douleurs d'origine ischémique (30), les douleurs des ulcères variqueux (13), du zona (11), les algies des amputés (10), (12), la polynévrite éthylique (5), (6) ; certaines affections du système nerveux central : syndromes psycho-polynévritiques, encéphalites, maladie de PARKINSON post-encéphalitique (dans ce dernier cas, on peut même faire des injections sous-arachnoïdiennes ou épidurales). On les utilise aussi au cours de l'asystolie (14), (30), des affections gastro-intestinales, de la grossesse et de la croissance (26).

VITAMINE C

Synonymes : **Facteur antiscorbutique. — Acide ascorbique. — Lactone 1-céto-3-thréo-hexonique.**

La vitamine C est très répandue dans le règne végétal, en particulier dans le fruit du Piment (Capsicum Annuum) d'où SZENT-GYÖRGYI l'a extraite en 1932 et les fruits des Aurantiées (orange, citron). Chez les animaux, l'organe le plus riche est la glande surrénale. REICHSTEIN d'une part, et HAWORTH d'autre part, en ont réalisé la synthèse en 1933 à partir du *l*-xylose. On peut également partir du *d*-glucose transformé en *l*-sorbitol. C'est un acide en C^6, de constitution glucidique, renfermant une double liaison portant 2 oxhydriles œnoliques, et conjuguée à un groupe lactonique.

Elle se présente comme une poudre blanche, cristalline, très soluble dans l'eau et dans l'alcool méthylique, moins soluble dans

l'alcool éthylique et l'acétone, insoluble dans l'éther et l'éther de pétrole. Ses sels de sodium et d'ammonium sont solubles dans l'eau ; son sel de baryum y est peu soluble. Elle fond à + 192° et son pouvoir rotatoire α_D = + 20° à + 22° selon la concentration ; son spectre d'absorption a une bande unique intense à 245 mμ. Stable en milieu biologique (jus de citron), elle est rapidement détruite dans l'eau pure ; elle reste intacte pendant 3 mois dans une atmosphère de CO^2, mais à l'air, perd presque toute son activité en 2 jours. L'alcalinisation accélère ce processus (27).

Le traitement thermique de l'acide ascorbique (20 minutes à + 120°) entraîne sa destruction complète en atmosphère d'oxygène ; dans l'air, il en subsiste 50 % et 90 à 95 % en atmosphère d'azote ou de gaz carbonique. La stérilisation à l'abri de l'air en présence d'un gaz neutre maintient donc à peu près intégralement le taux d'acide ascorbique, quel que soit le pH (23).

L'acide ascorbique possède une acidité marquée et un pouvoir réducteur intense vis-à-vis de la liqueur de FEHLING, du nitrate d'argent, du permanganate de potasse. Cette propriété est mise à profit pour son identification et son dosage : méthode de TILLMANS au dichlorophénol-indophénol, méthode de P. MEUNIER au bleu de méthylène irradié par une lumière intense. L'acide ascorbique donne en outre une réaction d'oxydation réversible avec formation d'acide déhydroascorbique, instable et lui-même oxydable de façon irréversible ; ce processus serait à la base de l'activité physiologique de la vitamine C (20), (27).

La carence vraie en vitamine C détermine le scorbut, maladie rare ; la carence fruste est beaucoup plus fréquente. Expérimentalement, chez le cobaye, l'acide ascorbique arrête les hémorragies du scorbut (cette action n'est pas spécifique) et active la régénération cellulaire et le péristaltisme intestinal (29). Il intervient dans l'économie comme transporteur d'hydrogène ; son rôle est surtout important dans le métabolisme des glucides (20).

L'unité internationale est la quantité minima nécessaire pour préserver du scorbut un cobaye de 200 gr. Elle est représentée par 0 mmgr. 05 de l'acide *l*-ascorbique cristallisé étalon (27).

Les formes injectables de vitamine C sont présentées en ampoules de 1 et 2 cc. de solutions à 2,5 et 5 % pour les voies intramusculaire et intraveineuse. En dehors des maladies par carence, elles sont indiquées au cours de la tuberculose et en particulier de la maladie d'ADDISON, de la diphtérie, de la pneumonie (22), de

l'asthme (traitement de la crise et traitement de fond) (19), des hémothorax du pneumothorax thérapeutique (24), des syndromes hémorragiques d'origine capillaire (17), de l'hémophilie, de l'anémie, de la chlorose (26), de l'agranulocytose (30). Il faut doser régulièrement l'acide ascorbique dans les urines et continuer le traitement jusqu'à saturation de l'organisme, c'est-à-dire jusqu'à ce que 40 à 75 % de la dose absorbée soit éliminée. On ne dépassera pas 1 gr. chez l'adulte et 0 gr. 05 chez l'enfant, par jour. Le cancer est une contre-indication formelle (21).

On a employé l'acide ascorbique dans le traitement de la syphilis pour éviter l'intolérance aux arsénobenzènes en ajoutant 0 gr. 05 à 0 gr. 10 par injection, afin de pouvoir soumettre les intolérants à des cures intenses (18).

L'association des vitamines B_1 et C a été utilisée en injections intraveineuses pour traiter les névrites et certains troubles digestifs (anorexie, constipation habituelle). L'association avec le gluconate de calcium, selon le schéma suivant, donne d'excellents résultats contre l'acné juvénile et les troubles concomitants ; selon leur gravité, on administrera :

1° XX gouttes d'acide ascorbique à 5 % *per os* et une injection intramusculaire quotidienne de 0 gr. 025 dissous dans 2 cc. de gluconate de calcium, à 10 % ;

ou 2° une injection intraveineuse quotidienne de 0 gr. 040 dissous dans 5 cc. de gluconate de calcium, à 10 % ;

ou 3° une injection intraveineuse quotidienne de 0 gr. 040 dissous dans 10 cc. de gluconate de calcium à 10 % (30).

L'ascorbinate de fer bivalent, corps bleu, soluble dans l'eau, à laquelle il communique sa couleur, a été utilisé en injections intraveineuses à raison de 1 cc. de solution à 1 % comme traitement des anémies sensibles au fer (16).

VITAMINE D

Synonymes : **Facteur antirachitique. — Calciférol.**

La vitamine D est abondante dans l'huile de foie des poissons : Téléostéens (Morue, Flétan, Thon). Les travaux des spécialistes ont abouti à la distinction entre la vitamine D ou D_3, vitamine naturelle des huiles de foie de poissons et la vitamine D_1 combinaison de la substance à action proprement vitaminique D_2, ou calciférol, avec un produit d'irradiation des stérols, le lumistérol. Le calci-

férol et la vitamine D_3 se forment sous l'action de la lumière (rayons ultra-violets) aux dépens de l'ergostérol et du dihydro-7-8-cholestérol qui sont des provitamines.

Le cholestérol et les corps analogues ou stérols sont des monoalcools secondaires dont la molécule comporte 3 cycles hexagonaux, un cycle pentagonal et fixée sur ce dernier, une chaîne latérale à 4 doubles liaisons.

La vitamine D_2 ou calciférol dérive de l'ergostérol par ouverture d'un des noyaux hexagonaux et c'est à partir de ce stérol qu'on la synthétise. On l'extrait de l'huile de foie de poisson par le benzène ; on épuise ensuite le résidu d'évaporation par l'alcool méthylique et on purifie par adsorption chromatographique sur hydroxyde d'aluminium.

Le calciférol se présente en cristaux incolores et inodores fondant à + 114° — + 117°, de pouvoir rotatoire α_D = + 101° — + 102°,5 en solution alcoolique et α_D = + 52° en solution chloroformique. Il est soluble dans les huiles et les solvants organiques usuels, insoluble dans l'eau. En solution dans le cyclohexane, son spectre d'absorption possède une bande caractéristique avec maximum à 265 mμ. La vitamine D_2 est détruite par chauffage à + 180° pendant 4 heures ; dans l'huile d'olive, à 0°, elle perd son activité en 3 ans ; les émulsions huileuses en milieu aqueux sont détruites en 6 mois, de même le calciférol pur cristallisé (27). Ses solutions huileuses sont donc stérilisables pendant 20 minutes à + 110°.

Il résiste à l'action des alcalis et donne avec le trichlorure d'antimoine en solution chloroformique une coloration jaune orangé (27).

La carence spontanée et expérimentale en vitamine D produit le rachitisme, maladie osseuse des sujets jeunes et type des avitaminoses non mortelles (28). Le calciférol corrige le déséquilibre alimentaire phosphocalcique, mais ne supplée pas à la déficience en ions Ca et P, même quand ceux-ci sont en proportion équilibrée (29). L'unité internationale est représentée par 0 gr. 001 de solution huileuse étalon, soit 0,025 γ de calciférol cristallisé. La vitamine D est inscrite au tableau C (27).

Le traitement du rachitisme par les injections intramusculaires de vitamine D exige de très hautes doses : 150.000 unités ; la dose de 50.000 unités est insuffisante dans ce cas, mais convient pour le traitement de la spasmophilie (30). La tuberculose, les états de

dénutrition et l'anorexie sont justiciables de l'association des vitamines A et D à raison de 20.000 unités internationales de chacune d'entre elles dans 2 cc. ; on pratique 2 injections intramusculaires par semaine pendant 10 semaines, avec un repos de 15 jours entre 2 séries. L'huile de vaseline permet la dissolution de la vitamine A en même temps que la vitamine D sans qu'il y ait à craindre, de ce fait, la différence dans l'assimilation par rapport à une solution faite dans l'huile végétale (26).

VITAMINE P.P.

Synonymes : **Facteur antipellagreux. — Acide nicotinique. — Acide pyridine β-carbonique.**

La vitamine P.P. (pellagra-préventive) fait partie du complexe B primitif. On l'extrait du son de riz après adsorption des autres éléments par la terre à foulon.

La vitamine P.P. est représentée par l'acide nicotinique, acide pyridine β-carbonique (ou par son amide). Elle est soluble dans l'eau, non adsorbable par la terre à foulon, thermostabile ; elle ne perd pas son activité après 5 heures d'autoclave à + 120° en solution saline.

La carence chez l'homme produit la pellagre avec ses 3 phases : phase érythémateuse, phase paralytique et délirante, phase cachectique. L'acide nicotinique est le remède spécifique de la pellagre du porc, de la « blacktongue » du chien et de l'érythème de la pellagre humaine (28), (29).

On l'emploie en psychiatrie comme traitement de la stupeur sous forme d'injections intraveineuses de nicotinate de soude (préparé en neutralisant une solution saturée d'acide nicotinique par le bicarbonate de soude, en présence de phénolphtaléine). Les doses s'échelonnent de 0 gr. 100 à 0 gr. 300 par jour et doivent être poursuivies de 3 à 10 jours (30).



Y

YATRENE

1. R. Weitz. — *F. M. N.*, 1935, 482.

C'est un mélange renfermant 25 % de bicarbonate de soude et 75 % de lorétine ou acide méta-iodo-ortho-oxyquinoléine-5-sulfonique.

Au contact de l'eau, le bicarbonate permet la dissolution de la lorétine et il se forme le sel de sodium correspondant. Le yatrène est donc une lorétine sodique. Il renferme 28 % d'iode.

Poudre jaune clair, inodore, soluble dans l'eau tiède, en donnant une solution plus ou moins jaune, selon que le milieu est neutre ou alcalin. L'addition de carbonate de sodium décolore cette solution. On la stérilisera donc par tyndallisation à 70.°

On l'emploie par voie intraveineuse dans les maladies infectieuses, les staphylococcies, la furonculose, les complications de la blennorragie, à la dose de 0 gr. 025 et au-dessus deux fois par semaine. On a également utilisé l'association yatrène caséine comme réalisant à la fois l'antisepsie et la protéinothérapie. On l'injecte par voie intramusculaire ou voie intraveineuse dans diverses affections inflammatoires, les rhumatismes musculaires et articulaires.



YOHIMBINE

1. R. Dietzel, F. Schlemmer et R. Fischer. — *Arch. der Pharm.*, 1929, CCLXVII, 468.
2. Busquet et Vischniac. — *Com. Soc. Thér.*, 10 février 1937, in *J. P. C.* (8), 1937, XXV, 619.
3. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, II, 1682.

La yohimbine, alcaloïde non sérié, extraite de Corynanthe Yohimbe (Rubiacées) est une base tertiaire comportant un alcool secondaire et un méthoxyle, qui se présente en aiguilles blanches

altérables à la lumière, insolubles dans l'eau. On emploie son chlorhydrate peu soluble à froid dans l'eau (1/136) plus soluble à + 100° (1/30) (3).

L'yohimbine est très sensible à la chaleur dans les conditions usuelles de stérilisation ; les solutions se colorent et quelquefois se troublent avec le temps ; cette altération est pratiquement évitée par le chauffage à + 100° dans des ampoules de verre neutre, remplies en atmosphère d'azote (1).

C'est un paralysant du sympathique employé comme anesthésique local en ophtalmologie et surtout comme excitant aphrodisiaque et hypotenseur contre les troubles de la menstruation, à la dose de 5 à 10 mmgr. en solution au 1/100e (3).

Un autre sel, le phényldiéthylbarbiturate d'yohimbine est indiqué dans tous les cas de fibrillation et notamment l'angine de poitrine (2).

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Z

ZINC (CHLORURE de)

Synonyme : **Beurre de Zinc.**

1. P. Lebeau et G. Courtois. — *Trait. Pharm. Chim.*, 1938, I, 395.

Le produit officinal est le chlorure de zinc distillé à une température inférieure au rouge cerise. On obtient une substance blanche, en plaque, très caustique et hygroscopique. On doit donc le conserver en flacons bien bouchés, de très petite capacité.

Il est très soluble dans l'eau, soluble dans l'éther, la glycérine, et l'alcool qui s'y combine.

Ses solutions aqueuses sont acides ; très dilué, le sel se dissocie en acide et en oxychlorure de zinc (1) ; on doit le stériliser par tyndallisation.

Il a été préconisé par Lannelongue en injections sclérogènes dans les tumeurs blanches et l'épididymite tuberculeuse :

Chlorure de zinc	1 gr.
Chlorhydrate de Cocaïne ou Stovaïne	0 gr. 10
Eau distillée	9 gr.

Injecter II à III gouttes dans la tumeur blanche ; renouveler cette injection 5 à 6 fois en d'autres points de manière à infiltrer la fongosité avec un total de VIII à XX gouttes.

Le soluté devra être dédoublé avant l'injection dans l'épididyme.

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ADDENDA *

Page 132. CONSERVATION DES LIQUIDES INJECTABLES

29. A. Goris et Y. Breugnot. — *B. S. P.*, 1942, XLIX, 5, 84.

Goris et Mlle Breugnot ont montré que de toutes les ampoules à base de sels de sodium, de calcium et de mercure, seules, la solution de Ringer, et la solution d'acétyl-glycocollate de calcium deviennent fortement alcalines après plusieurs années. Parmi les solutions d'alcaloïdes, les solutions de sulfate d'atropine deviennent alcalines tandis que les solutions contenant de la morphine deviennent acides ainsi que celles de chlorhydrate de cocaïne pures ou adrénalinées et les solutions de percaïne et de novocaïne adrénalinées. Les solutions de percaïne et de novocaïne pures sont stables (29).

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Page 659. VITAMINE « K »

31. A. Ravina. — *Ann. Ther.*, 1940, 166. Paris, Masson, édit.

La vitamine « K », vitamine liposoluble du foie et de la graisse de porc, du jaune d'œuf et de certaines feuilles vertes peut s'administrer chez l'adulte à la dose de 0,5 cm³ de solution huileuse à 5 milligrammes par cm³ ; chez l'enfant les doses varient de 1/3 à 1 milligramme.

Elle est surtout indiquée dans les cas de toxémie maternelle avant l'accouchement, d'accouchement prématuré ou difficile ; lorsque l'alimentation au sein est impossible ; enfin, dans les cas de symptômes cérébraux des premiers jours de la vie, d'hémorragie diathésique, d'ictère grave des nouveau-nés, d'intervention chirurgicale, de déficience en prothrombine (31).

* Nous donnons ici un résumé très succinct de deux articles plus particulièrement intéressants, parus alors que notre ouvrage était sous presse.

INDEX DES ABRÉVIATIONS BIBLIOGRAPHIQUES

B. S. P. = *Bulletin des Sciences Pharmacologiques.*
F. M. N. = *Formulaire des Médicaments nouveaux.*
J. P. C. = *Journal de Pharmacie et de Chimie.*
P. M. = *Presse Médicale.*
U. P. = *Union Pharmaceutique.*

INDEX ALPHABÉTIQUE

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